the Economic Impact of Migrant Farmworkers on Virginia's Eastern Shore

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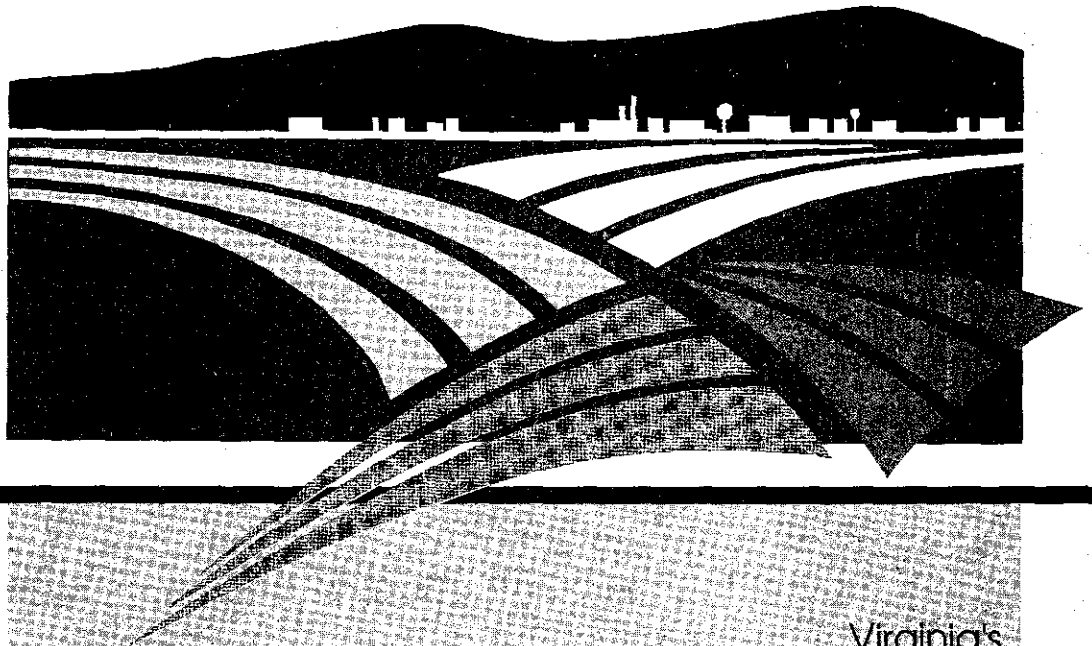

Virginia's
Rural Economic Analysis Program
Department of Agricultural Economics
College of Agriculture and Life Sciences
Virginia Tech

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Erin O. Sills, Jeffrey Alwang, and Paul Driscoll

Erin Sills is a graduate student at Duke University in Durham, North Carolina, and Jeffrey Alwang and Paul Driscoll are assistant professors in the Department of Agricultural and Applied Economics at Virginia Tech.

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EXECUTIVE SUMMARY

The analysis described in this paper addresses the issue of how economic conditions on the Virginia Eastern Shore would change if migrant workers were no longer available to local agricultural producers. Under a variety of assumptions about how production would change following the withdrawal of migrants, several scenarios were run to produce estimates of economic impact. Widespread use of contract non-resident workers, replacement of labor-intensive crops with grains and other mechanized production systems, and idling of migrant-dependent acreage were all examined. The results show that migrant farmworkers have a significant impact on the economy of the Eastern Shore. These results may be summarized as follows:

1. Withdrawal of migrants would lower total economic output in Accomack and Northampton Counties in the short run by an estimated $45.8 million, would lower employee income by $6.4 million, and lower by 398 the number of full-time equivalent jobs for Eastern Shore residents. County-wide unemployment would increase by 1.7 percent if migrant workers were no longer available to local producers.

2. If migrant farmworkers were replaced completely by contract guestworkers, in the short run total Eastern Shore economic output would fall by $4.7 million annually, resident employee income would fall by $2.0 million, and 131 permanent local jobs would be lost.

3. If, in the long run, fruit and vegetable acreage were replaced with less labor-intensive soybean and grain acreage following withdrawal of the migrants, then total annual output would fall by $42.9 million, employee income would fall by $6.0 million, and 349 full-time permanent local jobs would be lost.

4. The migrant camp construction program of 1990-1991, funded by the state and federal governments, increased local output by $1.2 million, increased local payrolls by $0.4 million, and added 16 jobs to the area's economy.

ACKNOWLEDGMENTS

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INTRODUCTION

The Virginia Eastern Shore, consisting of Northampton and Accomack Counties on the lower Delmarva Peninsula (see Figure 1), is one of Virginia's most predominantly agricultural regions. Since the 1950s, farmers on the Eastern Shore have depended on migrant workers to plant and harvest their crops. Since that time, both the agricultural sector and the migrant labor force have undergone numerous changes. Migrant labor is now used primarily in the production of vegetables and fruits, the Eastern Shore's most valuable crops. These workers, and the farms that require their labor, are important components of the Eastern Shore's economy.

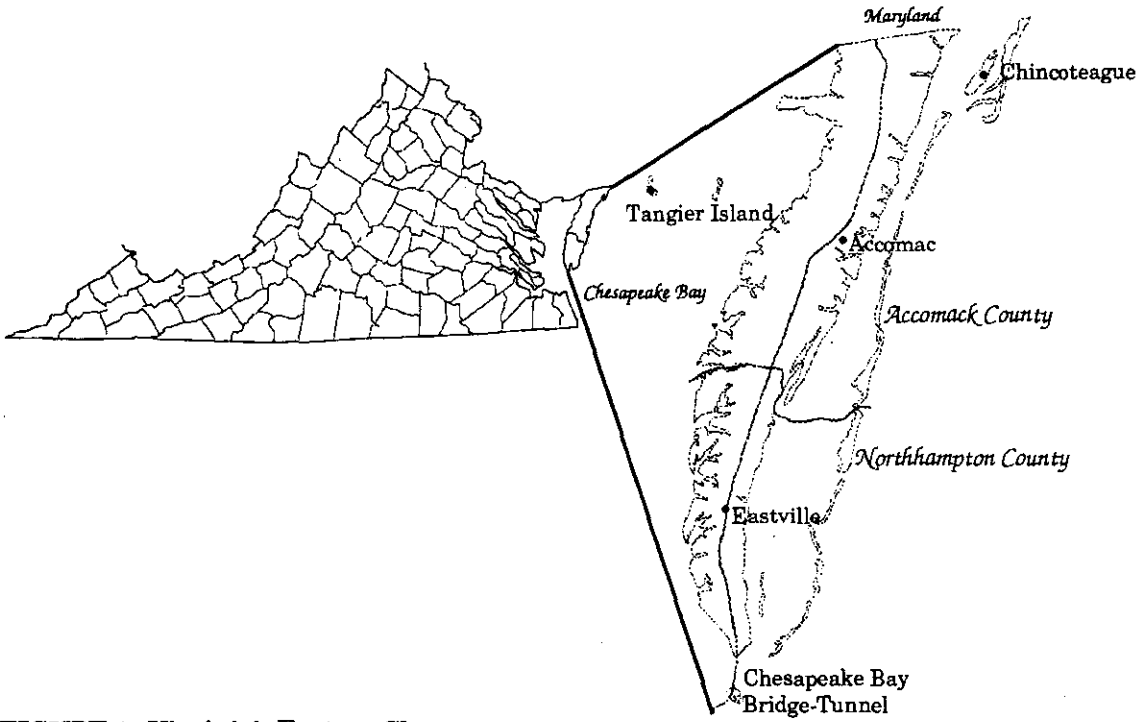

FIGURE 1. Virginia's Eastern Shore.

Although most farmers perceive migrants as hard workers who are essential for agricultural production, other segments of Eastern Shore society have a less positive view of the migrant population. The migrants generally speak little English and do not commingle with permanent residents. For historical reasons and due to their poverty and special legal status, migrants are often the beneficiaries of government assistance programs. They are therefore stereotyped by some as impoverished foreigners who come to the Eastern Shore to take advantage of the welfare system. Others see the migrants' poverty as evidence of the failure of that welfare system but still believe that the migrants are a burden on local government and society.

Local policy makers must sort through these varied opinions about migrant labor when deciding whether and how to regulate it. Their decisions on how to treat the migrant labor force affect not only the migrants and their employers, but also the entire agricultural sector and local economy. A careful analysis of the migrants' impact on the Eastern Shore economy could assist government officials in making those decisions.

Migrant farmworkers can have a significant impact on a rural economy. Their labor is valuable in the production of high-valued commodities such as fruits, vegetables, and

horticultural products. Local labor is not generally available to weed and hand-harvest these products. The withdrawal of migrants would force local producers to seek alternative labor-contracting methods, to produce lower-valued crops, or to retire significant acreage. These changes would lead to fewer purchases of agricultural inputs and lower consumer spending because of decreased wages and farm profits.

Migrant farmworkers also attract significant state, federal, and charitable funds into a region. Many organizations provide services to migrants on the Eastern Shore; two examples are Migrant Education Programs (funded by the state and federal governments) and Delmarva Rural Ministries (a federally- and grant-funded migrant health center). Much of the money for these services comes from outside the region. Withdrawal of the migrant population would remove this money from the region.

These recognized impacts of migrant farmworkers on the Eastern Shore economy are quantified in this study. Although many of the costs associated with the migrant presence are not considered explicitly, we have investigated changes in local economic activity that would occur under a variety of alternatives to migrant labor such as land idling, switching to less labor-intensive crops, and employing contract H-2A workers.[1] Information was gathered on spending by migrants, by the farms where they work, and by the agencies and organizations that assist them.

MIGRANT LABOR and EASTERN SHORE AGRICULTURE

Description of the Study Area

Accomack and Northampton Counties cover 702 square miles on the southern Delmarva Peninsula. According to the 1990 U.S. Census, the Eastern Shore had a population of 44,764. There was an annual average civilian labor force of 20,349 in 1990, and an average unemployment rate of 5.9 percent. In 1991, the civilian labor force increased only slightly to 20,956, and the unemployment rate rose to 8.1 percent (Virginia Employment Commission). The regional economy has generally lagged behind that of the rest of the state, with a persistently higher unemployment rate and lower per capita income. In 1989, per capita income was $13,740, as opposed to $18,979 for the state as a whole (U.S. Department of Commerce[f]).[2]

The sectors employing the most people in 1988, in rank order, were manufacturing, services, retail trade, and state and local government (Figure 2). The number of establishments, number of employees, and the total annual payroll in each of these sectors are reported in Table 1. The value of all agricultural production in 1987 was $83.3 million (in 1991 dollars). Total value added by manufacturing was $107.3 million. Total sales were $115.2 million for the wholesale sector and $180.3 million for the retail sector. Service industry receipts totaled $64.3 million.[3]

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[1]The H-2A program is a federal program that allows agricultural employers in areas with documented, seasonal labor shortages to contract with foreign guestworkers to work for a specified period of time in specified tasks.

[2]Throughout this study, values are reported in 1991 dollars.

[3]This data, from the U.S. Department of Commerce, includes only those establishments with employees.

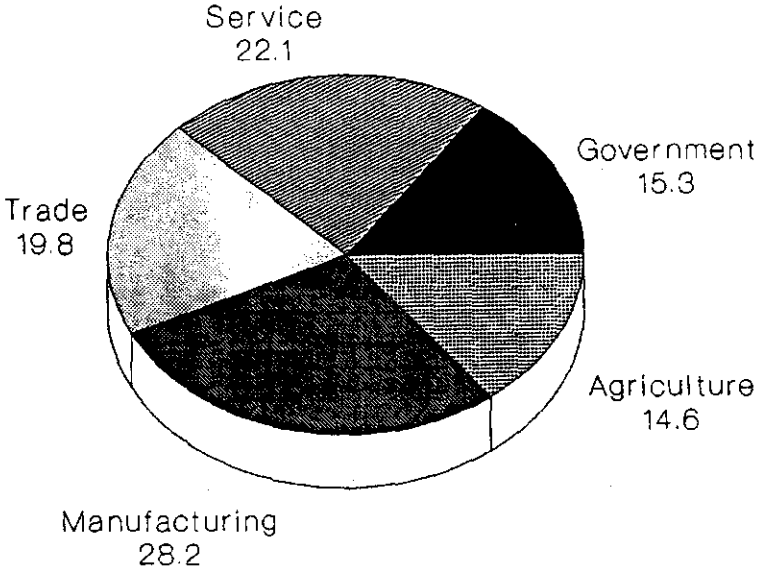

FIGURE 2. Percentage distribution of Virginia Eastern Shore employment, 1988.

TABLE 1. Structure of the Virginia Eastern Shore's nonagricultural economy.

Sector	Number of Establishments	Number of Employees	Annual Payroll in $ million
Manufacturing	44	4,400	54.5
Retail Trade	332	2,599	21.9
Services	219	1,519	25.6
Wholesale Trade	79	746	9.3

Source: U.S. Department of Commerce, Bureau of the Census, various reports, 1987-1989.

The Eastern Shore economy is far more dependent on agriculture than is the state as a whole. Agriculture and agricultural services (SIC codes 1-27) in 1985 accounted for .89 percent of total state value added (a measure of total state product) and 2.8 percent of total measured employment in the state. In contrast, for the Eastern Shore, agriculture's share of value added was 5.8 percent and its share of total employment was 14.6 percent.[4]

Agriculture on the Eastern Shore

Because nearly all migrant workers on the Eastern Shore are employed in the agricultural sector, that sector's outputs and inputs are crucial factors in the impact analysis. Agriculture and related agribusiness comprise a relatively large proportion of the local economy. In 1987, the most recent year for which data are available, there were 503 farms occupying 140,305 acres, or 32 percent of the land area of the two counties (U.S. Department of Commerce[a]). Of that total, 103,450 acres were harvested cropland, which includes land

[4]These percentages were taken from the IMPLAN data base. IMPLAN, an input-output computer model, is described in a later section.

in orchards, vineyards, and nurseries as well as land from which crops are harvested or hay is cut. Soybeans occupied the largest percentage of harvested croplands, followed by grains and vegetables (Figure 3). The acreage and number of farms producing specific vegetable crops are listed in Table 2.

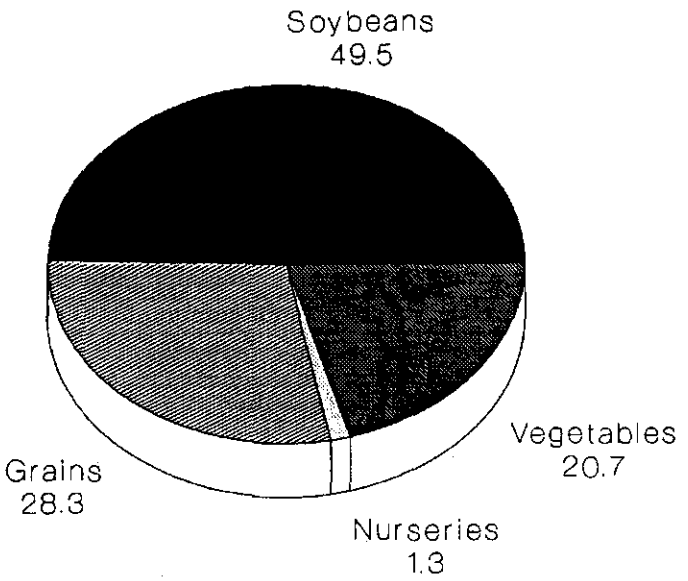

FIGURE 3. Percentage distribution of total crop acreage on Virginia's Eastern Shore, 1987.

TABLE 2. Vegetable acreage harvested and number of farms, Virginia Eastern Shore, 1987.

Crop	Acres harvested	No. farms which harvested
Cucumbers	4,951	61
Green Peas	159	18
Snap Beans	4,420	72
Squash	138	12
Sweet Corn	118	10
Sweet Peppers	545	19
Tomatoes	1,602	17
Watermelons	163	22
Total	12,096	231

Source: U.S. Department of Commerce, Bureau of the Census, *1987 Census of Agriculture*, 1989.

The total value of crops harvested in 1987 was $58.1 million, and the value of all agricultural production, including livestock, was $83.3 million. The composite sector of vegetables, sweet corn, and melons contributed the largest percent of this total (Figure 4). Fruit, vegetable, and nursery production represents a high-value use of agricultural land; such producers enjoy higher per acre returns than many other farm enterprises in Virginia (Figure 5). Most vegetables produced on the Eastern Shore are sold through brokers and shipped by truck to points up and down the East Coast. Direct sale to local consumers appears to be insignificant.

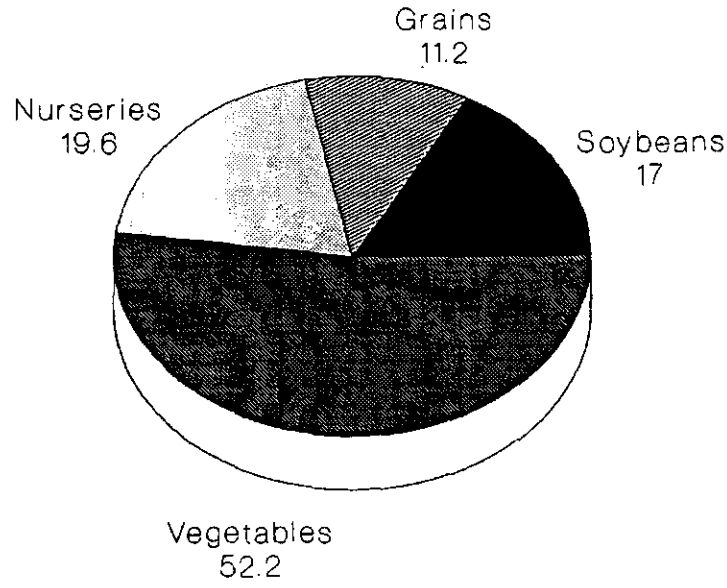

FIGURE 4. Percentage distribution of total value of agricultural production on Virginia's Eastern Shore, 1987.

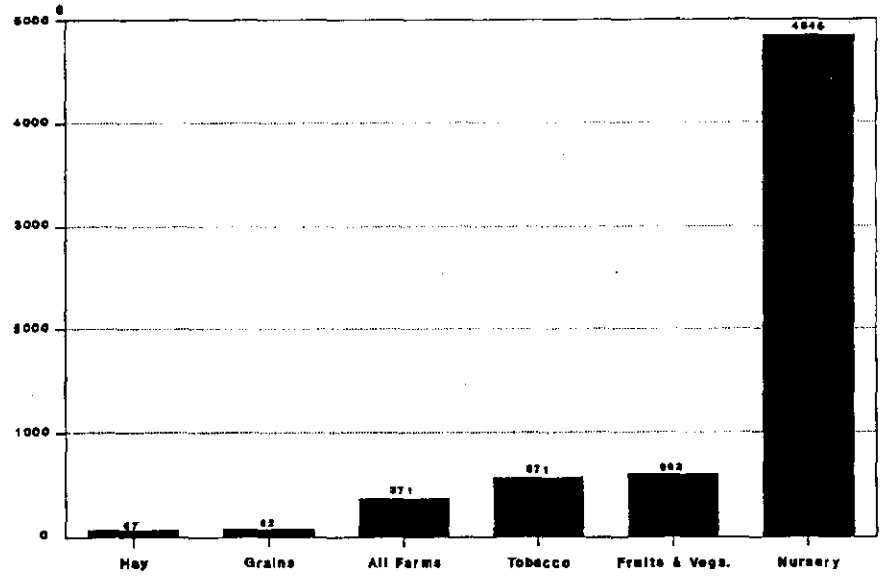

FIGURE 5. Average net farm income per acre for Virginia farms, 1988.
Source: Stallmann and Pease, "Virginia Farm Family Survey for 1988," 1989.

The agricultural sector's demand for labor is one determinant of migrant labor's impact on the local economy. As mentioned, labor-intensive enterprises, particularly vegetables and nursery/greenhouse operations, account for an overwhelming share of the value of agricultural production on the Eastern Shore (see Figure 4). In these operations, labor expenses are significantly higher than they are for conventional crop production (Figure 6). In order of increasing cost of labor per acre, the high-labor crops on the Eastern Shore are sweet potatoes, cucumbers, peppers, and fresh tomatoes (Diem). Estimates of labor costs for various crops were obtained from a survey of migrant agricultural employers (see the section on data collection below). The estimates of per-acre labor costs derived from the surveys range from $2,900 for tomatoes to $180 for potatoes (Figure 6).

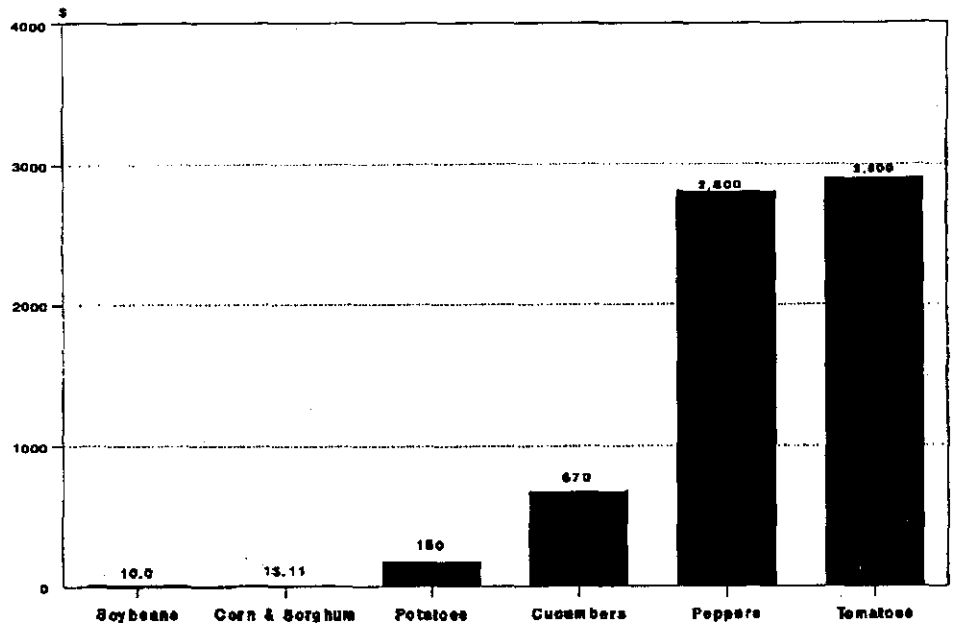

FIGURE 6. Labor costs per acre for crops on Virginia's Eastern Shore, 1991.
Sources: Virginia Cooperative Extension crop and livestock budgets, 1991;
Virginia Tech Dept. Ag. Econ. survey of employers, 1992.

Migrant Labor on the Eastern Shore

The Eastern Shore is midway along the eastern U.S. migrant stream. Along this migrant stream, which stretches from Florida up through New York and Massachusetts, migrants move northward and southward following the seasonal labor demands of agricultural producers. Most migrant workers who come to the Eastern Shore are employed by produce farms, although some work in other sectors of the economy such as seafood processing. For purposes of this study, however, only the impact of migrants who work in agriculture was considered. Estimates of the number of migrant farmworkers on the Eastern Shore vary widely and range from 3,000 to 5,000.

Recently, the migrant labor force on the Eastern Shore has been composed primarily of single, male Hispanic workers originally from Mexico and Central America, especially Guatemala. This composition represents a major change from the early 1980s when American blacks and Haitians predominated. By 1991, only 130 Haitian migrants and 335 black migrants were registered by a local migrant service organization (Delmarva Rural Ministries). The Hispanic workers generally come from Florida, either alone or with their families. It is estimated that 75 percent of the migrants on the Eastern Shore in recent years have been Mexican and approximately 13 percent have been Guatemalan (Delmarva Rural Ministries). The number of Guatemalan migrants has increased over the past several years. There is thought to be a large number of illegally documented migrant workers, although, for obvious reasons, no statistics are kept on the number of such workers.

Nearly all migrant workers are organized into crews of 5 to 250 workers who live and work together under the direction of a crewleader. The crews tend to be ethnically homogeneous, with Hispanics, black Americans, and Haitians rarely mixing. The labor crews can be divided into those that work for only one farm on the Eastern Shore and those that work for

several different farms. Many of the crews work on more than one farm in any given week and may even work on different farms in the same day. When crews work on more than one farm, the crewleaders are responsible for coordinating employment on the various farms and nurseries. They may even bring their crews to the Eastern Shore twice in the same year as they follow planting and harvest up and down the east coast.

Crewleaders are usually paid either a percentage of their crew's total payroll or a set amount per crop unit harvested with the crew's payroll subtracted from the total. Many crewleaders spend a substantial portion of their income transporting workers, farming equipment, and the crops themselves. The amount of responsibility delegated to crewleaders varies widely, as do their earnings.

According to most estimates, tomato production requires the most migrant labor of any crop produced on the Eastern Shore, in terms of both labor costs per acre and total labor costs for the crop (Figure 6 and Table 3). Migrant workers perform a wide range of tasks for tomato producers. Starting in March, migrant crews lay down irrigation systems and plastic. The crews plant the first tomato crop in April, then prune, stake, and tie the crop in May. Migrant crews harvest, grade, and pack the tomatoes in late June and July. After a slow period in August, work on the fall tomato crop begins. Workers harvesting tomatoes are paid on a piece-rate basis, while those grading and packing are usually paid the minimum wage. The pay system for other tasks varies between years and farms. Specialized workers, such as truck drivers and mechanics, are often paid either a higher hourly rate or a flat daily rate.

Sweet peppers are the second most migrant labor-intensive crop, followed by squash and cucumbers (Figure 6). In terms of the *total* migrant labor cost for an entire crop in the two counties, however, cucumbers are second, followed by potatoes, peppers, and a variety of other minor crops, including asparagus, peas, squash, watermelons, and greens such as collards and kale (Table 3). Nurseries and greenhouses also employ small migrant crews in the spring. The migrants who work in nurseries perform a wide variety of tasks and are generally paid the minimum wage.

TABLE 3. Total labor costs per crop, Virginia Eastern Shore, 1991.

Crop	Cost of Labor per Crop ($ million)
Tomatoes	4.64
Cucumbers	3.32
Potatoes	2.03
Peppers	1.53
Squash	0.14

Source: Virginia Tech Dept. Ag. Econ., Survey of Agricultural Employers, 1992.

The production of cucumbers, peppers, and the minor crops noted above requires migrant labor primarily for harvesting, grading, and packing. Work in cucumbers occurs from June until October, except for several weeks in August. Peppers are primarily a fall crop. As in the case of tomatoes, field workers are paid on a piece-rate basis, while those who work in the grading shed usually receive the minimum wage. Production of Irish potatoes and of sweet potatoes for processing only requires migrant labor in the grading sheds and again pays minimum wage. Production of sweet potatoes for fresh marketing has declined over the past several years but does still require some migrant labor, paid on a piece-rate basis, during the fall harvest.

8 Migrant Support Structure

The migrant support structure includes all government agencies and non-governmental organizations (NGOs) that provide services and assistance to migrant farmworkers or that enforce government regulations pertaining to migrants on the Eastern Shore. The support structure thus includes migrant-education programs; federal, state, and local government agencies; non-profit groups that depend on public funds; and private religious organizations, all of which will be referred to as "service organizations" in the remainder of this report.

The service organizations can be divided into educational, governmental, non-governmental, and religious groups (Table 4). The specific organizations and the services they provide are described in Appendix A.

TABLE 4. Migrant support structure on Virginia's Eastern Shore.

Type of Service	Names of Providers/Programs	Source of Funds
Education	Migrant Head Start	Federal Government
	Summer Migrant Education	Federal Government
	English as a Second Language	Federal/State Governments
Governmental	Food Stamps/Medicaid	Federal/State/Local Governments
	Women with Infant Children (WIC)	Federal Government
	Migrant/Crewleader Registration (Virginia Employment Commission)	Federal/State Governments
	Eastern Shore Health Clinic	Federal/State Governments
	Rehabilitation Services	State Government
	Migrant Camp Inspections	State Government
Non-Governmental	Delmarva Rural Ministries	Federal Government/Private Grants
	Legal Services	Federal Government
	Telemon (Job Training)	Federal Government
Religious	Various	Private Contributions

IMPACT ANALYSIS of MIGRANT LABOR

How Impacts are Measured

Economic impact analysis is a way to quantify the changes in a local economy that result from some initial "shock" to the economy. That shock could be, for example, a plant closure, industry expansion, or budget cuts in a major institution. As in this study, impact analysis is also used to measure the "significance" of an institution or of an activity (employment of migrant labor, for example) in a local economy.

The definitions of the area and population of interest are crucial to impact analysis. A shock to the economy of any one region will have effects on the economies of all surrounding regions. When the area of interest is the county where the initial shock occurs, the calculated impact of the shock should exclude any effects in other regions; such effects are called "leakages." In most cases, the population of interest is that which resides in the area of interest. One must also decide, however, whether the loss of employment and income by seasonal residents, or migrants, should be included in the impact report. In this study, the counties of Accomack and Northampton are the area of interest and the permanent, year-round residents of those counties are the population of interest.

There are three basic components of economic impact. *Direct* effects include changes in output, employee compensation, and value-added resulting from the economic change of interest. The principal direct effect of migrant agriculture is the production value of migrant-dependent crops. Direct effects also include wages paid to residents whose employment depends on the migrant presence. Wage payments to migrant workers are not considered to be direct local impacts, because migrants are not permanent residents;[5] however, when these wages are spent in the local area, *indirect* and *induced* effects arise. Indirect effects result from changes in purchases following the direct effect. For example, fertilizer purchases from migrant-dependent producers are indirect effects. Induced effects are changes in household spending resulting from the direct and indirect effects. Spending in the region by migrants, by employees of migrant-service providers, and by migrant employers are all induced effects. This study quantifies all direct, indirect, and induced effects affecting *local* firms and permanent, full-time residents.

In order to calculate impact, one must first estimate the changes in production by the directly affected sectors or in the payrolls and other expenditures of those sectors. These direct effects are then multiplied by the appropriate employment, personal income, and value-added multipliers for that sector. These calculations are complex, so impact analysis is most often done with computer-based input-output models. Such models contain all of the intersectoral linkages in an economy and can calculate the effects of a change in one sector on all other sectors, producing an estimate of total impact. This study used the Impact Analysis for Planning (IMPLAN) input-output model developed by the U.S. Forest Service (Siverts *et al.*).

Most input-output models supply information necessary for impact analyses. IMPLAN, for example, includes information on the spending patterns of different industries and of households with different income levels. For example, a seafood plant closure could be modeled using IMPLAN by simply reducing the output for the commercial fishing sector by an amount equivalent to the value of the plant's production. The program would then calculate the direct, indirect, and induced effects of the plant closure. The accuracy of impact analyses can be improved, however, by supplying the model with more detailed information. Returning to the example of the plant closure, the plant is not likely to purchase supplies and pay employees in exactly the same proportions that the model assigns to the commercial fishing sector. If actual payroll and other expenditure information were available from the plant, then these could be supplied to the model, resulting in a more accurate calculation of induced effects.

In this study, detailed information was gathered on the spending by migrants and migrant-service organizations. The proportions of income that migrants save and spend in different sectors were also estimated. Migrant service organizations' purchases from different sectors were determined. IMPLAN was relied upon for the input- purchase patterns of the affected agricultural sectors and for the spending patterns of affected households.

Components of the Impact Analysis

The direct impacts of loss of the migrant workforce, such as loss of output in the agricultural sector and loss of employment in the service sector, can be calculated directly from the information described below in the section entitled, "Data Collection." IMPLAN was used to calculate the total impact (direct plus indirect plus induced effects). Of the 525 industrial sectors in the IMPLAN database, only 110 occur on the Eastern Shore and therefore were included in the model for this study (Table 5).

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[5] This fundamental leakage created by the employment of workers who are not local residents makes the migrant industry unattractive to many people. It is argued that local welfare can be enhanced only by increasing employment prospects for local residents.

TABLE 5. Base-year information for the Virginia Eastern Shore used in the IMPLAN model (1985 prices).[a]

Industry	Base-year Final Demand ($ Million)	Base-year TIO[b] ($ Million)	Employee Compensation ($ Million)	Property Income ($ Million)	Total PoW[c] Income ($ Million)	Total Value Added ($ Million)
Livestock	3.4442	25.1950	.9545	3.7506	4.7053	5.0603
Food grains	2.7933	2.8374	.1296	.5886	.7182	.8111
Fruits	.4815	.5871	.0585	.2260	.2845	.2925
Vegetables	4.8803	5.4567	.3096	1.5295	1.8391	1.9338
Oil-bearing crops	6.6986	7.0489	.2802	1.4257	1.7060	2.0380
Forestry	9.6645	9.7490	.4413	3.9466	4.3879	4.7530
Greenhouse/ nursery prod.	1.1958	3.5567	.1218	.7078	.8296	.9151
Commercial fishing	.2191	12.0380	.8990	1.7784	2.6774	2.7949
Agric. & forestry services	9.8504	15.2778	5.1220	1.8438	6.9658	7.1856
Landscape & horticulture	6.4820	8.2313	3.8080	1.3522	5.1602	5.3051
Construction[d]	49.1020	55.7736	14.4120	7.9031	22.3151	22.5162
Manufacturing[d]	536.2081	550.0760	68.8390	26.7327	95.5716	98.1407
Transport., Comm. & Util.[d]	26.4079	52.2699	14.5260	13.2865	27.8126	30.5565
Wholesale & RetailTrade[d]	77.1972	107.1310	43.7950	16.9175	60.7125	70.3310
Finance, Ins. & Real Est.[d]	59.0703	80.2611	10.3740	41.2299	51.6038	58.7150
Services[d]	103.9154	129.5800	57.1680	18.0807	75.2487	79.1452
Govt. Enterprise[d]	146.7289	149.4136	81.8800	63.9348	145.8149	145.8149
Total	1044.3390	1214.4830	303.1185	205.2344	508.3531	536.3094

[a] To make these values consistent with the values used in the rest of the studies, they should be divided by the Consumer Price Index deflator (.78998).
[b] TIO is total industrial output.
[c] PoW Income is proprietor and wage income.
[d] These sectors are highly aggregated, i.e., they comprise many different industries.

The impact analysis was composed of five components, resulting from different aspects of the hypothesized removal of migrant workers: 1) the loss of migrant and crewleader spending; 2) the loss of expenditures (including employee compensation) by migrant service- organizations; 3) the reduced production of the agricultural sectors that employ migrants; 4) the loss of expenditures by employers on construction and maintenance of migrant housing; and 5) the potential gain in production of grains and other crops that do

not require migrant labor.[6] Components 1-4 represent the "short-run" impacts, while component 5 represents the "long-run" impact. These components were combined to determine the total impact of migrant labor on the Eastern Shore economy. A detailed description of each of these components is provided in Appendix B.

The impacts of replacing migrant workers with contract H-2A workers, and of the Commonwealth's 1990-1991 Migrant Camp- construction Program were also examined. The data used for all these impact assessments are presented in Appendix B.

Data Collection

Detailed information was required on all sectors and intersectoral linkages in the economy, and on spending by migrants themselves, by the farms that employ migrants, and by the organizations and agencies that assist migrants. The primary source for information on the Eastern Shore economy was the IMPLAN 1985 database. IMPLAN includes estimates of 1985 economic activity in Accomack and Northampton Counties drawn from "County & Business Patterns," Dunn & Bradstreet data, the Bureau of Economic Analysis Regional Economic Information System, the 1980 Census of Population, and the census of governments, housing, manufacturing, and agriculture (Siverts *et al.*).[7]

The information from IMPLAN was adjusted with information from statistical publications and interviews with industry representatives, local government officials, extension agents, and other sources familiar with economic conditions on the Eastern Shore. In addition, two surveys were conducted in 1991: Eastern Shore growers who employ migrant workers were surveyed to determine payrolls, labor requirements per acre of crop, and other information related to migrant employment; and 91 migrant workers and five migrant crewleaders were surveyed to determine their spending and savings patterns (Dept. Ag. Econ., Virginia Tech). Finally, migrant-service organizations were asked directly about their payrolls and expenditures.

Because many migrant-service organizations also serve local residents, our study had to define the proportion of their funding, and consequently of their expenditures, that can be considered a direct result of the migrant presence. To do so, we assumed that (1) any locally funded organizations would spend the same amount locally whether or not there were any migrants; and (2) any organizations that serve migrants but are not funded specifically to do so would spend the same amount locally if there were no migrants. Given these assumptions, we included only expenditures from funds that come from outside of the Eastern Shore and that are motivated by the migrant presence (i.e., funds provided to Eastern Shore institutions specifically due to the local use of migrant labor). An example of such funds is the federal Migrant Health grant to Delmarva Rural Ministries.

Expenditures by service providers, divided into payroll costs and overhead (operating expenses) are shown in Table 6. Total expenditures for these service providers in 1991 was approximately $2.4 million. This figure was used in our analysis as the direct impact of migrant-service providers. Calculations from payrolls and average salaries reveal that there are approximately 98 full-time equivalent employees who provide social services to migrants on the Eastern Shore.

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[6] Component 5 is a long-run adjustment, representing the most likely alternative use of migrant dependent land. For this component, it was assumed that the migrant acreage would, in the long run, be converted to soybeans and corn.

[7] The 1991 dollars reported in this study were deflated into 1985 dollars using the CPI deflator for purposes of the impact assessment. The results were subsequently reinflated to 1991 dollars in order to retain consistency throughout the study.

TABLE 6. Migrant-service organizations' expenditures on the Virginia Eastern Shore, 1991.

Expenditures by category	Category of Organization: Education	Government	NGO[a]	Religion	Total
Payroll[b]:					
Low income	$582,500	$44,400	$37,800	$17,200	$682,000
High income	35,000	172,800	342,500	15,000	565,300
Payroll Total	617,500	217,200	380,300	32,200	1,247,300
Overhead(operating expenses)					
Food[c]	29,200	620,000	9,000	2,000	660,200
Travel	48,800	18,900	55,100	12,200	135,100
Supplies	58,100	12,000	48,200	5,130	123,400
Rent & Utilities	40,300	8,000	25,800	6,500	80,600
Contractuals[d]	2,000	23,600	46,200	0	71,700
Maint. & Repair	33,800	2,800	17,200	0	53,800
Miscellaneous	6,300	4,900	13,100	0	24,300
Rest. & Hotels	0	4,400	500	0	4,900
Overhead Total	218,500	694,600	215,000	25,800	1,154,000
Totals	$836,000	$911,900	$595,400	$58,000	$2,401,200

[a]Non-governmental organization (= "non-profit").
[b]Low Income Payroll is that paid to employees who earn less than $15,000 annually. High Income Payroll includes payments to all other employees.
[c]Food includes foodstamp and WIC payments, in addition to directly purchased food.
[d]Contractuals include in-service.
Source: Direct interviews with providers, Spring-Fall, 1992.

Results

Elimination of the migrant labor force from the Eastern Shore would result in a $43-million (1991 dollars) loss in annual total local economic output *in the long run* (that is, following a switch to less-labor-intensive crops) (Table 7). This loss would represent a 3.2 percent decline in regional economic output. In the short run, the annual fall in output would be even greater ($46 million), because the land previously farmed with migrant labor would not all be immediately converted to alternative crops (or alternative production methods).

TABLE 7. Results of impact analysis.

Component of Change Affecting Economy	Total Economic Impact[a] ($million, 1991)	Total Change in Employee Income[b] ($million, 1991)	Change in Employment[b] (number)
Loss of Migrant Workers	-2.9327	-.9415	-60
Loss of Service Providers	-3.9501	-1.8700	-116
Loss of Migrant Acreage	-38.8934	-3.6663	-221
Loss of Migrant Housing Expenses	-.0505	-.0172	-1
Total Short-run Changes	**-45.8262**	**-6.4420**	**-398**
Gain from Switch to Grains	2.8973	.4058	49
Total Long-run Changes	**-42.9289**	**-6.0362**	**-349**
Replace Migrants with H-2A Workers	-4.6790	-2.0502	-131
State Camp Construction Program	-1.1866	-4.1580	-16

[a]Includes direct, indirect, and induced effects
[b]Changes in employee incomes and numbers do not include wages paid to migrants and crewleaders, who are not considered to be residents.

The migrant labor force on the Eastern Shore is responsible directly and indirectly for $6.4 million in annual local employee income. In the long run, following the hypothesized switch to less labor-intensive agriculture, annual local employee income would increase by $.4 million as workers were hired on grain farms and the increased activity from grain production was multiplied through the economy. Thus, the net long-run decrease in local employee income resulting from a loss of migrant workers would be $6.0 million. Withdrawal of migrants as a source of agricultural labor would reduce local full-time employment by between 131 and 398 people, or between 0.6 and 1.9 percent of the total local labor force. In the short-run, 398 local jobs would be lost; 49 of these would be replaced over time, leading to a long-run loss of 349 jobs. If migrants were completely replaced with H-2A workers, 131 fewer local jobs would exist than exist now.

If the migrants, migrant-service organizations, and migrant- dependent agriculture were removed from the economy, the resulting net payroll losses would be $840,000 in the aggregate service sector, $677,000 in the wholesale and retail trade sector, and $391,000 in the agriculture/forestry/fishery service sector.

If migrant laborers were replaced with H-2A workers, the negative impact of eliminating the migrant labor force would be much less than if there were no alternative labor supply (Table 7). The switch to H-2A workers would nevertheless create a significant economic impact on the local economy: Total annual output would fall by $4.7 million; annual Eastern Shore employee income would fall by $2.0 million; and 131 local jobs would be lost.

Finally, the analysis of the migrant camp-construction program funded by the state government revealed that the program had a significant positive impact on the local economy. This program took place in 1990 and 1991, and actual infusions from the state were used as input into the analysis. The direct effects of the program were to increase the gross output of the local construction sector by $840,000, its payroll by $301,900, and its value added by $352,700. The total effects on the local economy, as listed in Table 7, were to increase gross economic output by $1,186,600, local payrolls by $415,800, and value added by $571,500. These were one-time effects: the program was terminated in 1991. Nevertheless, these effects induce the positive impact of government assistance for migrant housing.

CONCLUSIONS

Migrant labor-dependent agriculture is a major component of the Virginia Eastern Shore economy. Vegetable, fruit, and ornamentals production is a significant part of the local economy, and the profitability of this production depends on migrant workers.

If the migrant labor sector and its social support structures were to shrink, the local economy would be affected in a number of ways. The number of wage and salaried employees would decrease, and this would in turn reduce consumer spending, with subsequent negative impacts on the retail and wholesale sectors. Reduced economic activity on farms would mean fewer purchases of inputs (e.g., fertilizer and fuel) necessary for farming operations. These linkages between the farm sector, the migrant-support sector, and the rest of the economy increase the economic impact of the migrant-dependent sectors beyond merely the value of migrant-dependent agricultural production and direct spending by social- service organizations.

Migrant laborers themselves, through local spending, contribute significantly to the economies of both Eastern Shore counties. In addition, tax revenues from retail sales and

real property taxes are increased by economic activity generated by migrant workers. Although the migrants themselves generally have low incomes, many of the people who provide migrant services receive incomes well above the county mean and thus enhance local prosperity. Finally, local employment is dramatically increased by the migrant presence; alternative uses of the land, such as grain production, would significantly lower the employment of the region's residents.

The Eastern Shore economy is relatively small; for example, as mentioned above, it includes only 100 of the possible 525 sectors in the IMPLAN model. The small size of the economy means that most of the money generated by the migrant presence is eventually lost from the area by "leakages"; that is, while money is spent on goods sold locally, most of the purchase price returns to producers of those goods outside of the Eastern Shore. A second result of the small Eastern Shore economy is that the impact of eliminating the migrant labor force would be significant to the total area economy. The migrant labor force is clearly important to the agricultural sector, which is in turn an important element of the overall local economy.

This study did not consider any of the market or non-market costs imposed by migrants. Although the migrant presence leads to significant infusions of state and federal dollars, we did not examine whether local expenditures on services, such as education and police protection, are also increased by this presence. The cost of the programs provided for migrants, because they are incurred by the federal and state governments, does not enter into the calculation of costs. These costs represent a transfer from U.S. and Virginia taxpayers and donors to migrants and the residents of the Eastern Shore.

Given that migrants have a strong positive impact on the Eastern Shore economy, the question becomes whether the migrant presence is inhibiting local economic development efforts. Anecdotal evidence points to the contrary conclusion. The economy of Winchester, Virginia, for example, has traditionally been, to a large extent, based on migrant-dependent fruit production. Recently, a combination of aggressive economic development efforts along with Winchester's advantageous location have allowed the area to undergo a major economic expansion while continuing and sustaining its migrant-dependent agricultural production. Other areas, as well—for example, the Hudson River Valley in New York, areas in southern New Jersey, and parts of the northern Delmarva Peninsula—have experienced economic development while maintaining a robust migrant agriculture.

Such examples indicate that migrant workers, and migrant-dependent agriculture, are not a fundamental brake on economic development on the Eastern Shore. On the contrary, at least two plausible development strategies can be described that *take advantage of* the Eastern Shore's migrant-dependent agriculture.

The first development strategy would be to target efforts toward increasing local production of some of the items used by migrant- dependent producers. Increased local purchases of inputs and consumer goods would create a greater multiplier for existing agricultural activities. Increased local processing of agricultural output would create greater value-added and higher- income employment opportunities. By taking these steps, the region would increase the benefits from its profitable migrant-dependent agriculture.

A second plausible development alternative would be to combine the traditional agriculture base with the potential of the Eastern Shore's other natural resource-based amenities. Vegetable, fruit, and ornamentals agriculture can comfortably coexist with "eco-tourism," historical tourism, and the seafood industry to form a more sustainable base of development. Increased direct sales of the Eastern Shores's current primary crops to consumers, which would lead to higher incomes for the region's agricultural producers, could be easily integrated into a tourism-based development scheme. In contrast, less labor-intensive

crops, such as soybeans, would be more difficult to integrate into a sustainable development scheme because they require more land and cannot be marketed locally.

Either of the development alternatives exploit the continued presence of migrant workers on the Virginia Eastern Shore. Our study has documented the substantial economic impact of migrant workers, an impact that has existed for many years and has increased in the past 20 years as the migrant-support structure has grown. As our two examples indicate, the historical and ongoing contribution of migrant workers can be an integral part of economic-development strategies for the region. Certainly, there are development alternatives that do not include a continued migrant-based agriculture; however, with the current importance of agriculture to the Eastern Shore's economy, it would be inadvisable to plan any short- or medium-run strategy that ignores agriculture and the migrants upon which it depends.

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APPENDICES

APPENDIX A: DESCRIPTION of MIGRANT SUPPORT PROGRAMS on the EASTERN SHORE

The different programs providing support for migrant workers are described below. Included in this description are the source of program funds, estimates of each organization's expenditure patterns, and approximate amounts of funds directly attributable to the presence of migrant workers. The organizations themselves are summarized in Table 4. The figures cited below formed components of the expenditures shown in Table 6.

Migrant Education Programs

Migrant education programs include Migrant Head Start, summer migrant education, and English as a Second Language (ESL) classes. The Head Start programs employ more than 150 people during the summer and fall. In addition to personnel costs, major expenses are pupil transportation, food, and school supplies.

Both Accomack and Northampton Counties have summer migrant education programs, funded primarily by the U.S. Department of Education. Funding is based on the number of students enrolled in previous years and on the size, scope, and quality of the local programs. In 1991, the migrant education programs employed approximately 90 people, including teachers, administrators, and support personnel. Personnel costs absorbed 75 percent of the combined migrant-education and food-services budget. In addition, Eastern Shore Community College paid 10 high school and college students to work as teaching aides in the Accomack migrant education program, with funding from the federal Job Training Partnership Act (JTPA).

Eastern Shore Community College offers ESL courses, which are attended primarily by migrants. Approximately 50 percent of the funding for ESL comes from the State Legalization Assistance Grant and is specifically designated for migrant education.

Governmental Assistance for Migrants

The governmental sector of the migrant support structure includes all federal, state, and local agencies that provide direct assistance or other services to migrants, or that enforce regulations pertaining to migrant employment and housing. In most cases, it is difficult to determine what portion of an agency's funding is motivated by the migrant presence. When this proportion could not be identified, those funds were not included in this analysis, so government expenditures may have been underestimated.

Direct Assistance

Although the Virginia Department of Social Services includes migrants in nearly all of its programs, the only program that involves a significant number of migrants is the processing of eligibility applications for food stamps and Medicaid. The impact of migrants on this program is considerable (Department of Social Services). In Accomack and Northampton, the total cost of eligibility administration in fiscal year 1991 was nearly $1.5 million, with about 40 percent of the funding from the federal government, and one third each from the

local and state governments.[8] Approximately 90 percent of the eligibility budget is used for salaries and fringe benefits.

Neither the Accomack nor the Northampton social services office, however, hires any temporary workers to help with the additional work load due to the migrant presence from May to October. It is thus difficult to estimate how many positions are funded due to the seasonal migrant case load. The estimate used in this study was six workers.

The values of foodstamp and Women, Infants, and Children (WIC) payments to migrants are also included in the totals for the governmental service organizations. Based on information from the Accomack Department of Social Services in combination with the camp occupancy data for the two counties, the total value of foodstamp payments to migrants in 1991 was estimated at $545,000. In 1991, the Virginia Department of Health distributed $74,707 in WIC checks to migrant women on the Eastern Shore. The WIC administration is funded by an annual grant from the federal government; approximately $15,000 is dedicated to serving migrants.

Four other government programs provide direct assistance to migrants: social security, unemployment insurance, worker's compensation, and aid to dependent children, or ADC. Very few migrants receive social security or worker's compensation benefits. Most "migrants" who receive unemployment benefits while on the Eastern Shore have chosen to winter-over there, and therefore fall outside this study's definition of migrants. Social workers estimate that fewer than 20 migrants earn ADC benefits while they are on the Eastern Shore. At an average monthly payment of $250, total ADC payments to migrants were probably less than $15,000 in 1991.

General Services

The Virginia Employment Commission (VEC) has two offices on the Eastern Shore, one in Exmore and the other in Oak Hall. Among other services, the VEC registers migrants, and the bilingual staff of the Exmore office often provide general orientation and referrals to other organizations. In 1991, the Exmore and Oak Hall VEC offices served 9,324 people, 36 percent of whom were migrant workers. Nevertheless, it appears that the Exmore VEC office has received additional funding only for the alien- certification program and not for the other services provided to migrants. The VEC has served large numbers of migrants only in the past several years, and the U.S. Department of Labor allocates funds based on the local population and unemployment rate, rather than the number of clients served in each VEC office.

The Virginia Department of Health's Eastern Shore Health District manages the WIC program and operates a health clinic that is open to migrant workers. Clinic services are funded by the state and local governments as well as by patient fees. The clinic director estimates that at least 550 migrants were treated in the clinic in 1991. Nevertheless, the health district does not receive any extra funds for provision of clinic services to migrants. The only expenditures, other than the WIC grant, that can be attributed to migrants are some portion of the environmental health budget, which is discussed below under enforcement of regulations.

The Virginia Department of Rehabilitative Services began the Migrant and Seasonal Agricultural Worker Project in 1990. The purpose of the project is to increase vocational

[8] Although these figures are for fiscal year 1991, the budget for fiscal year 1990 was not significantly different, and thus they are a good estimate of calendar year 1991 costs.

rehabilitative services to disabled farmworkers, and nearly all of the federal and state matching funds for the project have been used for direct services to farmworkers. In 1991, the program served 34 migrant and seasonal farmworkers on the Eastern Shore (Virginia Department of Rehabilitative Services).

Enforcement of Regulations

The Environmental Health Program of the Eastern Shore Health District issues permits and inspects migrant labor camps to ensure compliance with ETA and OSHA regulations. Although the Virginia Department of Labor (VDOL) is officially responsible for enforcement of OSHA, health department staff actually carry out the camp inspections. Four sanitarians inspect approximately 100 migrant labor camps on the Eastern Shore. Two of those positions were created by the state government in response to the need for more personnel to inspect labor camps. Our study included those two positions, one support position, and accompanying operating expenses in the budget of the migrant labor camp inspection program.

The Wage and Hour Division of the U.S. Department of Labor enforces the regulations established by minimum wage legislation and by the Federal Migrant and Seasonal Agricultural Workers Protection Act. The Maryland district office of Wage and Hour covers the Eastern Shore, visiting farms to inspect pay records, vehicle registration and insurance records, and general housing and working conditions. Because 1991 was an unusual year in that there were no inspections, this study used the estimate of average yearly expenditures provided by the Department of Labor.

Housing

In 1990-1991, the Virginia Department of Housing subsidized nine migrant housing projects in Accomack and Northampton with $484,300 in grants and loans. The total spent on migrant housing due to the program was $719,900. Because this migrant housing program only existed for one year, we considered its impacts separately from those of the other programs (see "Camp-construction Program" line in Table 7).

Non-Governmental Organizations (NGOs or Non-profits)

Most of the non-governmental organizations that serve migrant workers on the Eastern Shore receive substantial funding from the state or federal governments. Delmarva Rural Ministries (DRM), for example, is primarily funded by the Migrant Health Program of the U.S. Department of Health and Human Services, although they also receive grants from other governmental programs and from private donors. The main purpose of DRM is to provide health services to migrant workers, and thus the entire budget of the Eastern Shore office, more than half of which is for personnel costs, is included in the non-profit sector of the migrant support structure. The Area Health Education Council (AHEC) and the East Coast Migrant Health Project supply DRM with temporary staff during the summer, and the costs associated with this were also included in the non-profit sector. Finally, DRM assists with the operation of a farmworkers radio program, and its funding from the Presbyterian Church in Richmond was also included.

The Peninsula Legal Aid Center, Inc. operates the Virginia Farmworker Assistance Project through its Williamsburg and Belle Haven (Northampton County) offices. Legal Aid, funded by the federal government, provides free legal services to migrant workers. One

attorney in the Williamsburg office frequently travels to the Eastern Shore to work on migrant cases, and the entire Belle Haven office is oriented towards serving migrants. Due to the limited information that Legal Aid provided, their "migrant grant" budget was used as an approximation of the cost of migrant casework on the Eastern Shore (Peninsula Legal Aid Center).[9]

Telamon Corporation is funded entirely through federal grants. Telamon provides various services, including pre-employment training, job placement, general education development, try-out employment, temporary child care, emergency food and shelter, and referrals to other social service agencies and organizations. Eligibility is limited to migrant and seasonal farmworkers. The Eastern Shore office served 172 migrant and seasonal farmworkers in 1991. That office's payroll and operating expenses were included in the migrant support structure, and the wages and allowances paid to migrants in Telamon training programs were added to the migrant payroll.

Finally, the migrant population on the Eastern Shore is frequently the subject of academic, journalistic, and governmental studies that result in spending on the Eastern Shore. In 1991, Christopher Newport College carried out a research project on communicable diseases among migrant workers, and the project's expenditures on housing, food, and transportation on the Eastern Shore were included in the non-profit budget.

Religious Organizations

There are four religious organizations that serve migrants on the Eastern Shore and are not funded solely by local contributions. The Baptist Migrant Mission, Catholic Migrant Ministry, and Virginia Council of Churches Pastoral Ministry provide pastoral services, coordinate recreational programs, refer migrants to other social service organizations, provide translation services, and assist with applications to various government programs and with the legalization process. In addition, they sometimes assist migrants with rent and utility deposits, transportation costs, and emergency food and clothing. The Rock Church purchases gift certificates from local department stores with funds from Operation Blessing in Virginia Beach and distributes them to migrants in the fall.

Medical Services

The Northampton-Accomack Memorial Hospital, several private doctors, and the Eastern Shore Rural Health System (ESRHS) treat migrants and must absorb any costs that cannot be recovered from the migrants, Medicaid, or the State and Local Hospitalization (SLH) migrant program. There appears to be no significant net change in local economic activity as a result of the medical treatment of migrants. These medical costs were therefore excluded from the analysis.

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[9] It is not clear how Legal Aid's funding would be re-allocated (or reduced) if there were no migrants; the "migrant grant" budget is probably an underestimate of funding reductions following withdrawal of migrants.

APPENDIX B: COMPONENTS of the IMPACT ANALYSIS

The first component of the impact analysis is the loss of migrant and crewleader spending. The elimination of migrant and crewleader payrolls is not considered to be a *direct* impact on local employee compensation or employment, because the direct impact of the loss is not suffered by local residents.[10] The *indirect* and *induced* effects of the loss of local spending by migrants and crewleaders are, however, important impacts. The total migrant and crewleader payroll was extrapolated based on calculations from the survey of employers (Virginia Tech Department of Agricultural Economics), which provided crop-specific labor expenses by acre (Figure 6) and the estimates of crop acreage on the Eastern Shore. The total gross migrant and crewleader payrolls in 1991 were estimated to be $8.98 million and $2.5 million, respectively.[11] Migrant and crewleader spending patterns were derived from the survey of migrants (Virginia Tech Department of Agricultural Economics). Approximately 40 percent of what crewleaders are paid is for production expenses related to the transport of irrigation equipment, plastic, stakes, and crops to and from the fields. These expenditures are included in IMPLAN's agricultural production function and are therefore part of the third impact-analysis component, so this amount was subtracted from the estimated crewleader payroll. The impact analysis was therefore based on a migrant payroll of $8,984,990 and a crewleader payroll of $1,515,370.[12] Direct assistance payments to the migrants were also added to the migrant payroll.

We assumed that migrants save 25 percent of their earnings and crewleaders save 20 percent. The general spending patterns of migrants and crewleaders used in the study are shown in Table B-1.

TABLE B-1. Distribution of migrant spending on Virginia's Eastern Shore, 1991.

Category	% of Local Expenditures	$ Spent Locally[a]
Housing	7.2	$ 412,410
Groceries[b]	38.4	2,199,520
Eating out	4.4	252,030
Transportation	6.4	366,590
Phone & postage	4.5	257,760
Drinks & tobacco	6.8	389,500
Other goods	20.4	1,168,490
Medical	5.3	303,580
Laundry	5.3	303,580
Childcare	1.0	57,280
Other services	0.3	17,180
Total	100.0	$5,727,930

[a]Assuming a 25 percent savings rate.
[b]Groceries include both food and other household items purchased at supermarkets.
Source: Virginia Tech Dept. Ag. Econ., Survey of Migrants, 1992.

[10]The reduction in the total local payroll would, however, result in reduced income taxes.

[11]These estimates are subject to error, and the authors believe them to be conservative; the migrant payroll may well exceed $10 million.

[12]Taxes and Social Security (FICA) were deducted from these payrolls, and they were deflated to 1985 dollars.

The second component of total impact is the loss of the migrant-service providers (see Table 6). This loss directly affects the service sector by reducing employment. The reduction in employment lowers personal, or household, income, and consequently lowers purchases by households. This loss of household spending was calculated by multiplying the migrant-service organizations' payroll by IMPLAN's spending pattern for households.[13] Service providers operating budgets are also eliminated as part of this component. Operating expenditures were divided into purchases from the various IMPLAN sectors, using both detailed budget information provided by the organizations and IMPLAN's distribution of inputs to the service industries. Migrant food stamps, as well as purchases of "food" by organizations, were divided in the same manner as food purchased by the migrants with their paychecks. WIC payments to migrants were applied to a slightly different spending distribution to reflect the restrictions on items that can be purchased with WIC checks.

The third component of the analysis is the predicted reduction in the production of fruits and vegetables, and to a lesser degree, of greenhouse and nursery products, that would result if migrants no longer worked on the Eastern Shore. This component is referred to as "Loss of Migrant Acreage," in Table 7. It was assumed that the loss of all migrant labor would result in a 65 percent decrease in the production of crops for which migrant workers are used.[14] The remaining 35 percent was assumed to be maintained by mechanization, increased use of local labor, or both. The value of all Eastern Shore crops that require migrant labor was estimated at $34,236,000 for 1991.[15] The 65 percent decrease of $22,253,500 includes a 50 percent decrease in the local labor payroll ($1,597,200) and a 100 percent decrease in migrant and crewleader payrolls ($10,500,360). Thus, the migrant/crewleader payroll was about 47 percent of this decrease, the local payroll was about 7 percent, other value added (proprietor's income, other property income, taxes) was 15 percent, and the decrease in purchase of inputs from other sectors was 31 percent of the change. Because spending by migrants and crewleaders was considered in the first component, the third component did not include any indirect and induced effects from migrant and crewleader payrolls.

The decrease in production was distributed among three IMPLAN sectors in proportion to the current value of their output and their dependence on migrant labor. Thus, there was a $21,586,350 loss of vegetable production, a $556,350 loss of fruit production, and a $111,250 loss of greenhouse and nursery production.

The fourth component, the decrease in expenditures for renovation and expansion of the migrant labor camps, was considered separately due to IMPLAN's accounting procedures for renovation and construction of buildings. Based on the survey of employers and the Virginia Department of Health's camp-inspection records, the annualized average expenditure on renovation and expansion of migrant labor camps was estimated at $36,000 per grower. After deflating, this figure was entered into IMPLAN as a change in demand for the farm-structures sector.

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[13] There are actually three different expenditure patterns for low-, medium-, and high-income households, which were applied to the three payrolls for low-, medium-, and high-income personnel.

[14] This estimate is based on interviews with the farmers and others familiar with Eastern Shore agriculture. It reflects a hypothesized 75 percent reduction in vegetable production, 25 percent reduction in fruit production, and 10 percent reduction in nursery/greenhouse production. Several respondents to the Survey of Employers indicated that they would mechanize production and use more local labor if they could no longer hire migrant workers.

[15] This value represents approximately 80 percent of the total value of production of fruits, vegetables, potatoes, and greenhouse/nursery products as reported in the *1987 Census of Agriculture* and *1989 Virginia Agricultural Statistics*. The estimate is not entirely comparable with census data, however, because it reflects the value of crops which have been graded and packaged.

Finally, the fifth component is the conversion of land no longer used for fruits, vegetables, and ornamentals to less labor-intensive agricultural production. This conversion is a long-term process. In the short run, the positive effects of the switch to new crops would do little to offset the negative effects of the loss of the migrant labor force.[16] It was assumed that the land removed from production of migrant crops would eventually be used for production of soybeans and food grains, in roughly the same proportions as they are currently produced.[17] The reduced production in the three migrant crop sectors would free 10,750 acres for other uses. The value of soybean and grain production per acre was taken from the *1987 Census of Agriculture*, multiplied by the appropriate number of acres, and then added to the IMPLAN model as an increase in demand for those products. Because grain production requires less labor and yields lower returns per acre, the conversion to grain would not produce nearly the same local economic impacts as the production of migrant-dependent crops.

These five components were used for the primary migrant impact analysis and were then modified to consider the possibility of replacing migrant workers with H-2A labor. In the H-2A scenario, the same migrant and crewleader spending patterns were used, but total spending was adjusted to reflect the assumption that H-2A workers save 50 percent of their income and that their crewleaders save 35 percent of their income. It was assumed that there would be no change in the total payroll or in the production of crops, but that all funding for migrant services would cease.

The component examining the loss of migrant housing expenses used in the above analyses did not include the cost of migrant labor camps built or renovated with funding from the Virginia Department of Housing and Community Development's 1990-1991 migrant housing construction program. A separate analysis calculated the impact of the nine construction and renovation projects that were partially funded by the Virginia Department of Housing and Community Development. The total cost of these projects was $804,100, of which 60 percent was covered by grants and subsidized loans from the government. After deflating, this figure was entered as a change in demand for the farm-structures sector.

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[16] Most impact analyses do not consider such long-run adjustments.

[17] More than half of the growers surveyed indicated that if there were no more migrants available to work on the Eastern Shore, they would produce other crops such as soybeans, wheat, barley, corn, and other small grains. Others indicated that they would "quit," most likely selling their land to a farming operation that did not require migrant labor. For this analysis, soybeans are considered equivalent to IMPLAN's oil-bearing crops sector, and the various grains are considered equivalent to IMPLAN's food grains sector.

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