Department
of Agriculture
STATE OF HAWAII

Economic Impacts of Agricultural Reservoir Closures in Hawaii

A Report to the Hawaii State Legislature
Per Act 118, SLH 2006
Relating to Emergency Relief for Natural Disasters

By
State of Hawaii
Department of Agriculture

September 7, 2010

Executive Summary

The purpose of this report is to assess the economic repercussions of possibly closing 113 high-risk agricultural reservoirs in Hawaii. Since the tragic breaching of the Ka Loko Dam on March 14, 2006, these reservoirs have come under scrutiny. To assess the situation, the Legislature has tasked the Hawaii Department of Agriculture (HDOA) with estimating the current economic role of these reservoirs and, if removed, the resulting economic repercussions.

HDOA contracted the U.S. Department of Agriculture, National Agricultural Statistics Service (NASS) to develop a survey to collect data from agricultural operations that utilize reservoir water. A total of 752 completed surveys were compiled to provide a current estimate of the reservoirs' role in the economy.

According to the data collected, 60.9 percent of cropland statewide, or 78,218 acres, rely on reservoir water. These operations currently report revenues of more than $324 million per year. If all reservoirs identified in this study were dismantled, the total loss each year would be $242 million, a 56 percent drop.

Reservoirs play an important role in agricultural operations as the primary source for irrigation. The reservoirs impound water during times of excess water and release water in a controlled manner when needed. Without the reservoirs, the number of arable acres for agriculture use would be greatly reduced.

To determine the overall, comprehensive economic impact of the removal of these reservoirs, HDOA employed the Inter-County Input-Output Model developed by the Hawaii State Department of Business, Economic Development and Tourism. This model is able to account for inter-industry relationships within and across regions and determine how the respective economies respond to changes.

It is estimated that the overall economic impact of these reservoir closures would be an output loss of $436 million. Additionally, the loss of household earnings associated with the total output loss is estimated at $141million with the elimination of 7,234 combined full-time and part-time jobs in total, including self-employed positions. These figures take into account the decrease in agricultural output and the impact upon associated industries.

The appendices provide detailed information about the characteristics of each reservoir (where available). The reservoir-specific information is intended to help state legislators and others as they continue to deliberate and act to mitigate future reservoir breaches.

Act 118 Legislative Mandate

Act 118, Session Laws of Hawaii 2006, provided emergency appropriations for the damage and destruction caused by heavy rains and flooding in February and March 2006. The act also required the Hawaii Department of Agriculture (HDOA) to assess the value of existing dams and reservoirs for agricultural operations and, if removed, the resulting economic impact upon those operations.

Act 118, Section 3, states:
There is appropriated out of the general revenues of the State of Hawaii the sum of $50,000 or so much thereof as may be necessary for fiscal year 2005-2006 for staff expenses and to hire consultants to assess the impact existing dams and reservoirs have on agricultural operations and the impact if existing dams and reservoirs were removed. The sum appropriated shall be expended by the Hawaii Department of Agriculture for the purpose of this act.

Importance of a Reservoir System

Reservoirs play an important role in agricultural operations by providing a critical service to impound water in times of excess flow, so that water can be released in a controlled manner to the farmers when they need it. The absence of water storage capacity in an irrigation system would significantly increase the business risk involved, and would likely reduce the planted acreage.

In addition to a loss in output, the overall value of the agricultural operations would be affected by the unavailability of reservoir water. Home and land tend to keep their values with or without reservoir water. However, businesses and assets that are agriculturally bound (tools, equipment, storage or processing facilities) would be significantly affected by the unavailability of reservoir water.

The impact of a reservoir closure would affect each operation differently based on three factors: (1) the operation's ability to locate a substitute source of water to continue agricultural activity, (2) the operation's potential to convert the operation or land into nonagricultural use, including agriculturally specific assets such as equipment and buildings and (3) the status of land tenure for the agriculture operation (lease versus ownership).

NASS Survey: Reservoir-Dependent Agricultural Operations

HDOA was tasked to assess the impact of existing reservoirs on current agricultural operations. To accomplish the task, HDOA contracted the U.S. Department of Agriculture, National Agricultural Statistics Service (NASS) to develop a survey of Hawaii dam owners and operators. Data was collected at a county level to ensure nondisclosure of firm-specific data as required by the USDA's confidentiality protocol. A total of 924 surveys were sent out. Some of the operators did not meet the required threshold of $1,000 in farm revenue, resulting in a total of 752 surveys qualifying for participation in the study. The full survey questionnaire and collected data are presented in Appendices I & II.

Due to confidentiality restrictions, NASS is not able to breakout revenue data for Maui County. However, HDOA staff estimated Maui County's 2006 revenue based on information collected from the annual reports of Alexander & Baldwin and Maui Land & Pineapple, the two major agricultural landowners in Maui County.

Tables 1 and 2 illustrate the current enterprise values as reported through the NASS survey. Table 1 highlights the reported values of the assets and gross revenue of the agricultural enterprises that use reservoir water and compares those values to total farm assets and revenue for the state. Excluding Maui, the assets of reservoir-dependent agricultural enterprises total $2 billion, which is approximately 47 percent of statewide farm assets. The gross farm revenues of reservoir-dependent agricultural enterprises, $324 million, represent 56.2 percent of the state's agricultural farm revenue.

Table 1: Reported Asset Values & Gross Revenues of Reservoir-Dependent Agricultural Enterprises

County	Land Value (#28)[2] $ mil	Home Value (#29) $ mil	Other Assets Value (#30) $ mil	Total Assets Value $ mil	Total Asset Value: Share of State Total[3]	Gross Farm Revenue (#13) $ mil	Gross Farm Revenue: Share of State Total[4]
Hawaii	$557.39[5]	$20.76	$35.12	$613.27	13.7%	$35.87	6.2%
Honolulu	$394.25	$10.05	$136.07	$540.37	12.1%	$89.05	15.5%
Kauai	$830.97	$14.90	$98.49	$944.37	21.2%	$69.27	12.0%
Maui[1]	NA	NA	NA	NA	NA	$129.8[6]	22.5%
State	$1,782.61	$45.71	$269.68	$2,098.01	47.0%	$323.99	56.2%

Source: Hawaii Agricultural Statistics Survey / Reservoir Impact Survey 2006

1. Maui data not available (NA)
2. Each number corresponds to a data field in the NASS survey (i.e. #28 is the field box for question 6a)
3. State 2003 Farm Assets Value used ($4,463.89 mil)
4. State 2005 Agriculture Farm Gate Revenue used ($576.17 mil)
5. Dollar figures reported in the millions ($ mil)
6. Estimates based on 80 percent of $162.3 mil for Maui's value of total crops, livestock and aquaculture (HAS 2006)

Table 2 illustrates the acreage and employment figures of the agricultural enterprises that use reservoir water. The data shows that the majority of cropland acreage (60.9 percent) utilizes reservoir water, and the workers of the surveyed enterprises represent a majority (72.5 percent) of the state's total agricultural workers.

Table 2: Reported Land and Job Values of Reservoir-Dependent Agricultural Enterprises							
County	Total Acres (#7)[1]	Total Cropland Acres (#9)	Total Acreage of Cropland Using Reservoir Water (#17)	Share of Cropland Using Reservoir Water in Total Cropland	County Share of Cropland Using Reservoir Water in State Total	Normal Number of Hired Workers (#33)	Share of Normal Number of Hired Workers in State Total [2]
Hawaii	180,465	2,338	1,968	84.2%	2.5%	372	5.3%
Honolulu	25,773	20,605	10,786	52.3%	13.8%	1,273	18.2%
Kauai	80,167	26,141	17,811	68.1%	22.8%	878	12.5%
Maui	107,501	79,421	47,653	60.0%	60.9%	2,554	36.5%
State	393,906	128,505	78,218	60.9%		5,077	72.5%

Source: Hawaii Agricultural Statistics Survey / Reservoir Impact Survey 2006
1. Each number corresponds to a data field in the NASS survey (i.e. #7 is the field box for question 4a)
2. 2005 state total figures used

Estimating Overall Economic Impacts: Hawaii Inter-County I-O Model and RIM II Methodology

HDOA collaborated with the Hawaii Department of Business, Economic Development and Tourism (DBEDT) to select a model to estimate the overall economic impact of a loss in output from agricultural operations due to a decrease in available reservoir water. The model selected was the Inter-County Input-Output Model developed by the DBEDT for Hawaii. Instead of using the final demand multipliers in the DBEDT model, HDOA calculated the output-driven multipliers according to the methodology used in the Regional Input-Output Modeling System (RIMS II) developed by the U.S. Bureau of Economic Analysis.

RIMS II was developed in the 1980s by the Bureau of Economic Analysis (BEA) as a means to estimate regional input-output (I-O) multipliers. The I-O multipliers account for the inter-industry relationships within regions and how the respective economies respond to changes. The model provides the framework to convert final-demand multipliers to output-driven multipliers — a key conversion for this project, since the calculation of the reservoir closure impact was measured as a decrease in output by the agricultural enterprises.

The impact of the reservoir closures was estimated for changes in output, earnings and employment — combining the direct, indirect and induced effects of the output change. As seen in Appendix III, the changes are estimated across a wide range of industries to give a realistic scenario of the total impact of reservoir closures. The industries include agriculture, mining and construction, food processing, other manufacturing, transportation, information, utilities, wholesale trade, retail trade, finance and insurance, real estate and rentals,

professional services, business services, educational services, health services, arts and entertainment, hotels, eating and drinking, other services and government.

Simulated Impacts of Agricultural Reservoir Closures

To calculate the economic impact of the reservoir closures, the estimated decrease in output was isolated. This calculation took the county-level value of gross farm revenue and subtracted the county-level value of estimated gross farm revenue without the reservoir.[1] The resulting value, representing the decrease in output, was then entered into the Hawaii Inter-County I-O modeling system to project regional impacts.

For Maui County, the change in output due to the loss of reservoir water was based on a percentage provided by NASS, since complete county data was not available. Table 3 shows the results of the simulated analysis.

Table 3: Economic Impacts of Reservoir Closures

	Hawaii County	City & County of Honolulu	Kauai County	Maui County	TOTAL
Number of Agricultural Reservoirs	9	15	35	54	113
Share in State Total	8.0%	13.3%	31.0%	47.8%	
Maximum Volume (mil gallons)	438	3,531	7,660	3,594	15,223
Share in State Total	2.9%	23.2%	50.3%	23.6%	
Loss in Agricultural Output ($ mil)	$12.3	$76.5	$67.4	$85.8	$242.0
Share in State Total	5.1%	31.6%	27.9%	35.5%	
Loss in Total Output ($ mil)	$21.5	$144.7	$116.9	$153.1	$436.2
Share in State Total	4.9%	33.2%	26.8%	35.1%	
Loss in Total Earnings ($ mil)	$6.7	$51.4	$31.7	$50.8	$140.6
Share in State Total	4.8%	36.5%	22.6%	36.1%	
Loss in Total Employment (jobs)	457	1,900	2,454	2,423	7,234
Share in State Total	6.3%	26.3%	33.9%	33.5%	

This simulation illustrates a hypothetical worst-case scenario — all reservoirs closing at the same time. A more realistic scenario is that certain higher risk reservoirs would be considered for closure and other lower risk reservoirs would be repaired and maintained. Since the output model has been established for each county; it would be a simple task to calculate the output loss of a specific reservoir and run it through the respective I-O model

[1] Data field #13 minus data field #22.

to estimate the closure impact. However, in some cases, the specific reservoir data may not be available, as some reservoirs cannot be isolated due to NASS confidentiality protocols. Some farms currently utilizing water from the reservoirs under study may manage to find alternative water sources to maintain agricultural production. With alternative water sources, farms could avoid a complete shutdown. Also, without agriculture, alternative uses of lands could generate incomes and jobs, although there would be some lag time before real activity could emerge. However, the total economic impact analysis of closing the reservoirs is based on the simplifying assumptions that (a) all reservoir systems would be closed immediately and simultaneously; (b) all reservoir-dependent agricultural operations that lack alternative water sources also would close down immediately following the reservoir closures; and (c) alternative economic activities to replace agricultural production would not be immediately feasible.

Associated Effects: Direct, Indirect and Induced

The reservoir closure simulation and the inter-county I-O analysis were conducted county by county, and the results are summarized in Table 4 and Table 5. In Table 4, each county row shows the total impacts on output, earnings and employment of the reservoir closures with columns showing the impacts disaggregated in direct, indirect and induced effects. All employment estimates are for combined full-time and part-time jobs, including self-employed. Direct effects refer to impacts at the farm level; indirect effects refer to impacts through inter-industry intermediate input purchases; and induced effects refer to impacts through household expenditures of disposable income.

The results from Table 4 suggest that approximately $242 million in agricultural output, measured at farm-gate value (farm revenue from agricultural products sold), would be lost in aggregate, should all agricultural reservoirs close simultaneously. Accompanying the output loss would be the disappearance of 5,589 farm jobs, and $90 million in household earnings, as shown in the bottom row of Table 4. The inter-county I-O analysis suggests that such closures would result in a total loss of $436 million in output (sales value), 7,234 jobs and more than $140 million of household earnings across industries statewide. The composition of total output loss includes $242 million in farm output, $67 million in indirect effects, and $127 million in induced effects. Of the 7,234 job losses, 5,589 would be in agriculture, 468 would be the result of inter-industry purchases, and 1,177 jobs across other industries as a result of the decline in household expenditures on goods and services.

Based on the loss in value of agricultural output (see Table 3), Hawaii County is surprisingly the least reservoir-dependent, although it has the largest amount of agricultural land in the state relative to other counties. If all agricultural reservoirs identified in this study in Hawaii County were to close down, the county would lose roughly $12 million in agricultural output, 375 farm jobs and $4 million of associated household earnings. Honolulu, the second most reservoir-dependent county, based on the loss in value of agricultural output, would lose over $76 million in farm output, 1,317 farm jobs and $32 million in associated household earnings. Kauai, the third most reservoir-dependent county, based on the loss in value of agricultural output, would lose $67 million in farm output, 2,028 farm jobs and $19 million in associated household earnings, should all agricultural reservoirs identified in this

study in the county close down. Maui is the most reservoir-dependent county, based on the loss in value of agricultural output, as it would lose nearly $86 million in farm output, 1,869 farm jobs and $34 million in associated household earnings, should all agricultural reservoirs identified in this study in the county close down.

Table 4: Economic Impacts of Reservoir-Dependent Farm Closures in Hawaii, by County
An Inter-County Input-Output Model Analysis
(Losses Due to Reservoir Closures)

		Direct Effects	Industry Linkage Effects	Induced Effects	Total Effects
Hawaii County	Output ($ mil)	$12.3	$3.1	$6.1	$21.5
	Earnings ($ mil)	$4.2	$0.8	$1.7	$6.7
	Employment (jobs)	375	23	59	457
Honolulu County	Output ($ mil)	$76.5	$21.5	$46.7	$144.7
	Earnings ($ mil)	$32.2	$5.4	$13.8	$51.4
	Employment (jobs)	1,317	153	430	1,900
Kauai County	Output ($ mil)	$67.4	$20.8	$28.7	$116.9
	Earnings ($ mil)	$19.3	$4.7	$7.7	$31.7
	Employment (jobs)	2,028	147	279	2,454
Maui County	Output ($ mil)	$85.8	$21.4	$45.9	$153.1
	Earnings ($ mil)	$34.3	$4.8	$11.7	$50.8
	Employment (jobs)	1,869	145	409	2,423
Total	Output ($ mil)	$242.0	$66.8	$127.3	$436.1
	Earnings ($ mil)	$90.0	$15.7	$35.0	$140.7
	Employment (jobs)	5,589	468	1,177	7,234

Table 5 shows inter-county dependency — the extent to which reservoir system closures in a county could affect the economy beyond the county in which the reservoirs are located.

Table 5: County Distribution of the Economic Impacts of Reservoir-Dependent Farm Closures
An Inter-County Input-Output Model Analysis
(Losses Due to Reservoir Closures)

		Own County	Rest of State	Total Effects
Hawaii County	Output ($ mil)	$17.6	$3.9	$21.5
	Earnings ($ mil)	$5.7	$1.0	$6.7
	Employment (jobs)	429	28	457
Honolulu County	Output ($ mil)	$140.2	$4.5	$144.7
	Earnings ($ mil)	$50.1	$1.3	$51.4
	Employment (jobs)	1,844	55	1,899
Kauai County	Output ($ mil)	$100.0	$16.9	$116.9
	Earnings ($ mil)	$27.2	$4.5	$31.7
	Employment (jobs)	2,321	133	2,454
Maui County	Output ($ mil)	$129.7	$23.4	$153.1
	Earnings ($ mil)	$44.5	$6.3	$50.8
	Employment (jobs)	2,239	184	2,423
Total	Output ($ mil)	$387.5	$48.7	$436.2
	Earnings ($ mil)	$127.5	$13.2	$140.7
	Employment (jobs)	6,834	400	7,234

Note: "Own County" refers to impacts within the county where the farm is located

Table 5 shows cross-county economic impacts of the reservoir closures beyond the county in which the reservoirs are located. As shown in Table 5, if all of agricultural reservoirs in Kauai County were to be closed down, approximately $117 million in output would be lost, $100 million (85.5 percent) in the county and $16.9 million (14.5 percent) in other counties. Most of the impacts beyond Kauai would occur in Honolulu ($15.4 million, not shown in the table). Cross-county impacts on earnings and employment are similar, which can be read in rows below the output row for each of the counties. Cross-county economic impacts of reservoir closures in Hawaii and Maui counties are similar to that of Kauai. For Hawaii County, 18.1 percent of the total impact would occur outside the county, and for Maui County, 15.3 percent.

In all three categories (output, earnings and employment), Honolulu would be affected the most. This is because Honolulu has the largest economy with the most diversified supplies for farm operations as compared to the much smaller economies of Hawaii, Kauai, and

Maui. Honolulu County is different from the rest in that only 3.1 percent of its total output and 2.9 percent of its employment would impact the other counties. The reason is because Honolulu does not need to purchase from other counties as much as other counties need to procure supplies and resources from Honolulu.

The economic impact analysis is based on farm-gate value (farm revenue from agricultural products sold). It excludes the value added from wholesale/retail services, agricultural processing and exports. Thus, the total economic impact results that have been estimated are lower than what would be the actual total impact of the reservoir closures.

Beyond the farm, agricultural outputs either went to (1) local supermarkets as fresh produce, or (2) outside markets as fresh produce, or (3) processing facilities — all of which create added value to the primary goods. The processes involved in getting fresh produce to the end consumer through the supermarkets (or grocery stores) create added value to the goods, as a result of transporting, packaging and retailing. These are real services to end consumers and create jobs and incomes in the state economy. Were Hawaii a closed economy, then the disappearance of local produce would affect the transportation, wholesale and retail businesses, and all other businesses that support them. However, as Hawaii is an open economy, the loss of local produce as a result of the reservoir closures would not have a significant impact on transportation, wholesale and retail businesses. The disappearance of local produce would immediately be replaced by imports.

Agricultural exports and agricultural processing create jobs and incomes within the export and processing sectors, and for the businesses that support them. However, the economic impacts resulting from the disappearance of local farm production may be different between the export and processing businesses. Unless the business success of agricultural processing is based on the unique quality of local materials, the disappearance of locally grown agricultural products used for processing can be replaced by imported raw materials. Thus, if local materials lack uniqueness and imports are available, the closure of local farms would not affect jobs and incomes in the processing industry. However, the closure of the reservoirs (and therefore farm operations) would inevitably affect jobs and incomes in the agricultural export sector, because the loss of local agricultural products cannot be replaced by imports for re-export.

An unknown portion of farm products grown with the studied reservoir waters were exported. Likewise the specific commodities, and how much of them went to processing plants that were transformed into processed foods and canned drinks that depend on ingredients originated in Hawaii, are not reported in the survey. Thus, the value added from processing facilities and from export activities is unaccounted for in the total impact estimation.

Conclusion

The loss of reservoir water would have a substantial impact on the agricultural base of Hawaii. If all agricultural reservoirs identified in this study were closed, some 60.9 percent of usable cropland statewide would be impacted and many agricultural enterprises would

likely need to seek alternative business models. The farms involved would collectively lose $242 million in farm revenues and 5,589 farm jobs.

As this "rippling" effect reverberates throughout the state economy, the overall economic impact (loss) of these reservoir closures is estimated at $436 million of total output, $141 million of household earnings and the elimination of 7,234 jobs (Table 4). The overall economic impact accounts for farm production and all intra- and inter-related non-farm businesses. The analysis also reveals that the reservoir closures in any county would, as a result of cross-county interdependence, affect output and employment beyond the county in which the affected reservoirs are located (Table 5).

These reservoir-dependent agricultural operations also offer aesthetic value, providing an open and green landscape pleasing both to residents and to the millions of visitors who visit Hawaii each year. In addition, the public looks toward the state government to provide leadership and direction in protecting the lives and businesses that surround and benefit from the reservoir systems. Values such as these go beyond the traditional economic scope estimated in this analysis.

Acknowledgements

This study benefited greatly from the collective efforts of many individuals. Mark Hudson (USDA-NASS) led the survey development and data collection phase; Dr. Abel Konan and Todd Low (HDOA) conducted data analysis, organization, writing and editing of the earlier drafts; Dr. Mana Southichack (HDOA) performed additional assessment of the multiplier effects and writing of the later drafts; Dr. Khem Sharma and Dr. Binsheng Lee (DBEDT) provided technical assistance and the Hawaii inter-county input-output model; Elaine Terry and Nancy Ralston (HDOA) assisted in editing and formatting; Professor PS Leung (UH-CTAHR), Dr. Eugene Tian (DBEDT), Matthew Loke (HDOA), Duane Okamoto (Deputy to the Chairperson, BOA) and Sandra Lee Kunimoto (Chairperson, BOA) provided constructive comments and suggestions.

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Appendix I

NASS Reservoir Survey 2006

NASS
FACT FINDERS FOR AGRICULTURE
UNITED STATES DEPARTMENT OF AGRICULTURE

National Agricultural Statistics Service
USDA, NASS, Hawaii Field Office
1428 South King Street
Honolulu, Hawaii 96814-2512
Telephone: (808) 973-9588
Toll Free: (800) 804-9514
Fax: (808) 973-2909

Reservoir Impact Survey 2006

In cooperation with:
Department of Agriculture
STATE OF HAWAII

Project Code 454

Office Use Only	
County Code	1 «Cty_ID»
Reservoir Code	2 «DamID»
Tract Code	3

Reservoir: «Rservoir_Name» Tract: _____

«Opername»
«First_name» «Last_Name»
«Address»
«Placename» «F9» «Zip_5»
PH: «Phone_Land»

Information requested in this survey will be used to measure the economic impact made by reservoirs that furnish irrigation water to agricultural operations. By law, individual information regarding your operation will be kept **strictly confidential** and cannot be turned over to anyone else, including any other government agency. Your report will only be used in combination with other similar reports in combined aggregate county totals. Your response is voluntary, but this information helps policy and law makers make informed decisions regarding our irrigation water and structures that affect Hawaii's agricultural future.

1. **At any time during 2006, did you operate any land that used water from the _____ reservoir?**

1 ☐ **Yes** → continue with **Item 2.**
3 ☐ **No** → *conclude interview and thank respondent for his/her time.*

4 ☐

2. **At any time during 2006, or in a normal year, would this operation grow any crops or own or raise any bees, livestock, poultry, or aquaculture with agricultural sales totaling $1,000 or higher?**

1 ☐ **Yes** → continue with **Item 4.**
3 ☐ **No** → continue with **Item 3.**

5 ☐

3. **At any time during 2006, did you sell any agricultural products you produced or receive government farm payments that were $1,000 or more?**

1 ☐ **Yes** → continue with **Item 4.**
3 ☐ **No** → *conclude interview and thank respondent for his/her time.*

6 ☐

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4. **Questions listed below are the previous year's numbers (2006) plus projected or estimated numbers for 2015.**

	Calendar year of 2006	Projected for calendar year 2015
a. Total acres of operation	7 . acres	8 . acres
b. Total cropland acres	9 . acres	10 . acres
c. Value of products sold	11 $	12 $
d. Gross farm revenue which includes sales of agricultural products, land subleasing fees, agricultural tourism revenues, or other generated revenues associated with your agricultural operation...	13 $	14 $
e. Total acreage that uses reservoir irrigation water	15 . acres	16 . acres
f. Total cropland acreage that utilizes reservoir irrigation water	17 . acres	18 . acres
g. Irrigation water drawn annually from reservoir	19 gallons	20 gallons

5. **What would be the current values for the questions listed below if the reservoir structure was dismantled and <u>irrigation water</u> from those structures, or well water, were not accessible to the farming operation during 2006?**

a. Value of products sold	21 $
b. Gross farm revenue which includes sales of agricultural products, land subleasing fees, agricultural tourism revenues, or other generated revenues associated with your agricultural operation	22 $
c. Total acreage that would continue to be in agricultural production	23 . acres
d. Total cropland acreage that would continue to be in agricultural production	24 . acres
e. Value of land operated by your agricultural operation	25 $
f. Value of home or homes located on your agricultural operation	26 $
g. Value of buildings structures, vehicles, machinery, and agricultural products located on your agricultural operation as of December 31, 2006	27 $

6. **On December 31, 2006:**

a.	Value of land operated by your agricultural operation	28 $
b.	Value of home, or homes, located on your agricultural operation.....	29 $
c.	Value of building structures, vehicles, machinery, and agricultural products located on your agricultural operation as of December 31, 2006	30 $

7. **Questions listed below refer to agricultural workers on your operation.**

a.	How many **total** individuals lived or worked on this operation (excluding temporary visitors) during 2006?.....	31
b.	What was the **largest** number of hired and contract workers employed by your operation on any one day during 2006?.....	32
c.	What was the **most prevalent or normal** number of hired and contract workers employed on your operation during 2006?	33

Thank you for your cooperation!

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ADDITIONAL COMMENTS:

RESPONDENT INFORMATION:

Name of respondent: _____

Position or relationship the respondent has with this operation: _____

Phone: (____) _____ Date: _____

INTERVIEWER: _____

Enumerator ID	Evaluation
34	35

Respondent Code	Response Code	Mode Code
36	37	38
1 = Operator / Manager 2 = Spouse 3 = Accountant / Bookkeeper 4 = Partner 9 = Other (specify)	1 = Complete 2 = Refusal 3 = Inaccessible	1 = Telephone 2 = Face-to-face

Edited	Keyed	Verified

Appendix II

Data from Reservoir Survey 2006

LIST OF RESERVOIRS WITH NO AGRICULTURE PRODUCTION

County	Reservoir Name	Reservoir Number	Owner
Hawaii	Lalakea	HI00026	Kamehameha Schools
Hawaii	E13	HI00027	Kamehameha Schools
Hawaii	Puukapu Watershed Retarding Dam R-1	HI00043	DLNR
Hawaii	Kehena	HI00052	Parker Ranch
Honolulu	Nuuanu Dam No 4	HI00001	Hoolulu Board of Water Supply
Honolulu	Ku Tree	HI00025	US Army
Honolulu	Reservoir 510	HI00037	Kamehameha Schools
Honolulu	Reservoir 530	HI00038	Kamehameha Schools
Honolulu	Reservoir 545A	HI00039	Kamehameha Schools
Honolulu	Kaneohe Dam	HI00124	City & County of Honolulu
Kauai	Waiakalua	HI00010	Kilauea Farms Community Association
Kauai	Upper Kapahi	HI00013	DLNR
Kauai	Morita	HI00029	Ed Doty
Kauai	Wailua	HI00060	DLNR
Kauai	Lower Kapahi	HI00061	DLNR
Kauai	Twin Reservoir	HI00062	Bette Midler Trust
Kauai	Field 2 Kealia	HI00064	DHHL
Kauai	Upper Anahola	HI00065	DHHL
Kauai	Lower Anahola	HI00066	DHHL
Kauai	Field 1 Kealia	HI00067	DHHL
Kauai	Aepo	HI00103	A & B Properties, Inc.
Kauai	Kumano	HI00106	A & B Properties, Inc.
Kauai	Kaupale	HI00108	A & B Properties, Inc.
Kauai	Aepoalua	HI00110	A & B Properties, Inc.
Kauai	Aepoekolu	HI00111	A & B Properties, Inc.
Kauai	Aepoeha	HI00112	A & B Properties, Inc.
Kauai	Omau	HI00113	A & B Properties, Inc.
Kauai	Manuhonuhonu	HI00118	A & B Properties, Inc.

HAWAII COUNTY

Reservoir Name	Waimea Puu Pulehu*	Hawi No 3	Honokaa - Paauilo	Kohala Ditch	Waikoloa 50 #1, #2, #3	Keaiwa	Hawai No 5	Aggregated Dams	Hawaii County Total
Owner	HDOA	Kamehameha Schools	HDOA		Hawaii County, Dept of Water	Olsen Trust	Kohala Surety		
Reservoir Number	HI00042 HI00123	HI00050	HI00131	HI00121	HI00040 HI00122 HI00136	HI00049	HI00040		
No of Dams	2	1	1		3	1	1		9
Max Volume (acre-feet)	504	130	46		570	40	55		1,345
Max Volume (M gallons)	164	42	15		186	13	18		438
Total Acres 2006 (#7)	1,250	151,115	7,037	19,463	***	***	***	1,600	180,465
Total Acres 2015 (#8)	1,210	151,115	6,743	11,671	***	***	***	1,750	172,489
Cropland 2006 (#9)	620	0	780	478	***	***	***	460	2,338
Cropland 2015 (#10)	550	0	821	529	***	***	***	484	2,384
PS 2006 (#11)	$7,093	$10,237	$6,670	$9,948	***	***	***	$1,190	$35,138
PS 2015 (#12)	$5,812	$10,237	$13,350	$13,348	***	***	***	$2,840	$45,587
GR 2006 (#13)	$7,093	$10,237	$6,750	$10,603	***	***	***	$1,190	$35,873
GR 2015 (#14)	$5,812	$10,237	$13,496	$14,069	***	***	***	$3,010	$46,624
Total Irr 2006 (#15)	700	15,190	1,200	11,700	***	***	***	91	28,881
Total Irr 2015 (#16)	1,095	15,190	821	2,131	***	***	***	400	19,637
Cropland Irr 2006 (#17)	620	0	780	308	***	***	***	260	1,968
Cropland Irr 2015 (#18)	550	0	821	364	***	***	***	415	2,150
Water usage 2006 (#19)	368,970	33,287	30,550	236,009	***	***	***	5,500	674,316
Water usage 2015 (#20)	350,060	33,295	44,514	341,161	***	***	***	21,800	790,830
PS W/O water (#21)	800	10,000	7,100	4,507	***	***	***	1,080	23,487
GR W/O water (#22)	800	10,000	7,100	4,580	***	***	***	1,080	23,560
Total acres W/O water (#23)	178	140,000	5,650	11,671	***	***	***	1,550	159,049
Cropland W/O water (#24)	30	0	27	107	***	***	***	0	164
Land value W/O Water #25)	$36,898	$313,125	$35,413	$158,524	***	***	***	$2,850	$546,810
Home value W/O water (#26)	$8,970	$1,300	$900	$7,370	***	$600	***	$1,010	$19,550
Other value W/O water (#27)	$3,114	$6,234	$10,443	$10,896	***	$984	***	$1,650	$32,337
Land value 12/31/2006 (#28)	$36,898	$313,125	$35,339	$167,180	***	***	***	$4,850	$557,392
Home value 12/31/2006(#29)	$8,970	$1,300	$950	$8,530	***	$600	***	$1,010	$20,760
Other value 12/31/2006 (#30)	$3,607	$6,234	$10,443	$12,616	***	$1,334	***	$2,225	$35,125
Total population (#31)	207	80	100	312	***	***	***	20	719
Peak workers (#32)	105	62	67	214	***	***	***	10	458
Mode workers (#33)	96	62	60	150	***	***	***	4	372
Operations	48	5	25	56	***	***	***	38	172

* Puu Pulehu serves as a backup or holding storage structure for the Waimea reservoir

*** Reservoirs aggregated to protect the privacy of the owners

HONOLULU COUNTY

Reservoir Name	Waimanalo	Wahiawa Kemoo 5 Upper Helemano Helemano 6 Helemano 16	Opaeula 01 Opaeula 02 Opaeula 05	Oahu Reservoir 155	Aggregrated Dams	Honolulu County Total
Owner	HDOA	Dole	Kamehameha Schools	Campbell Estates		
Reservoir Number	HI00129	HI00017 HI00021 HI00022 HI00023 HI00045	HI00018 HI00019 HI00020	HI00137		
No. of Dams	1	5	3	1		10
Max Volume (acre-feet)	182	10,058	560	37		10,837
Max Volume (M gallons)	59	3,277	182	12		3,531
Total Acres 2006 (#7)	1,450	***	***	***	24,323	25,773
Total Acres 2015 (#8)	1,490	***	***	***	18,694	20,184
Cropland 2006 (#9)	1,200	***	***	***	19,405	20,605
Cropland 2015 (#10)	1,330	***	***	***	13,686	15,016
PS 2006 (#11)	$6,179	***	***	***	$68,002	$74,181
PS 2015 (#12)	$13,907	***	***	***	$50,131	$64,038
GR 2006 (#13)	$6,551	***	***	***	$82,501	$89,052
GR 2015 (#14)	$14,965	***	***	***	$69,693	$84,658
Total Irr 2006 (#15)	1,400	***	***	***	12,695	14,095
Total Irr 2015 (#16)	1,440	***	***	***	11,812	13,252
Cropland Irr 2006 (#17)	1,150	***	***	***	9,636	10,786
Cropland Irr 2015 (#18)	1,330	***	***	***	8,366	9,696
Water usage 2006 (#19)	161,621	***	***	***	6,169,210	6,330,831
Water usage 2015 (#20)	267,320	***	***	***	4,731,487	4,998,807
PS W/O water (#21)	5,540	***	***	***	6,016	11,556
GR W/O water (#22)	6,261	***	***	***	6,336	12,597
Total acres W/O water (#23)	94	***	***	***	2,710	2,804
Cropland W/O water (#24)	72	***	***	***	2,462	2,534
Land value W/O Water (#25)	$40,684	***	***	***	$219,498	$260,182
Home value W/O water (#26)	$9,350	***	***	***	$700	$10,050
Other value W/O water (#27)	$1,628	***	***	***	$37,991	$39,619
Land value 12/31/2006 (#28)	$39,581	***	***	***	$354,670	$394,251
Home value 12/31/2006 (#29)	$9,350	***	***	***	$700	$10,050
Other value 12/31/2006 (#30)	$2,228	***	***	***	$133,846	$136,074
Total population (#31)	290	***	***	***	1,522	1,812
Peak workers (#32)	88	***	***	***	1,247	1,335
Mode workers (#33)	76	***	***	***	1,197	1,273
Operations	58					

*** Reservoirs aggregated to protect the privacy of the owners

KAUAI COUNTY

Reservoir Name	Kaneha	Minino	Kalihiwai	Koloko	Huinawai	Puu Lua Kitano Mana	Piwai	Puu Opae Aahoaka Halamanu Field	Waikaia Kepani Waikoloa Kaawanui	All Kapaia Okinawa Waita Ahukini Papuaa Halenanahu	Alexander Kapa Hukiwai Ioleau Elima Ipuolono Mau Elua	Puu Ka Ele	Puu O Hewa Pia Mill Mauka	Aggregrated Dams	Kauai County Total
Owner	Cornerstone Hawaii Holdings	Cornerstone Hawaii Holdings	Kalihiwai Ridge Comm Assn	Pflueger Partners	A & B Properties	ADC	A & B Properties	DLNR	Gay & Robinson	Grove Farm Company	Kauai Coffee Company	Jurassic Kahili Ranch	Eric A. Knudsen Trust		
Reservoir Number	HI00015	HI00016	HI00024	HI00030	HI00104	HI00002 HI00004 HI00005	HI00114	HI00003 HI00063 HII00135	HI00006 HI00007 HI00008 HI00009	HI00011 HI00012 HI00014 HI00044 HI00099 HI00120 HI00121	HI00098 HI00100 HI00101 HI00102 HI00105 HI00109 HI00116 HI00117	HI00028	HI00107 HI00115 HI00119		
No of Dams	1	1	1	1	1	3	1	3	4	7	8	1	3		35
Max Volume (acre-feet)	420	70	428	1,400	196	2,143	261	505	400	12,695	3,705	490	796		23,509
Max Volume (M gallons)	137	23	139	456	64	698	85	165	130	4,137	1,207	160	259		7,660
Total Acres 2006 (#7)	1,300	500	450	165	154	***	***	***	***	***	***	***	***	77,598	80,167
Total Acres 2015 (#8)	1,300	500	0	232	154	***	***	***	***	***	***	***	***	78,568	80,754
Cropland 2006 (#9)	650	300	380	109	83	***	***	***	***	***	***	***	***	24,619	26,141
Cropland 2015 (#10)	800	400	0	162	83	***	***	***	***	***	***	***	***	27,621	29,066
PS 2006 (#11)	$180	$55	$722	$1,032	$1,532	***	***	***	***	***	***	***	***	$38,285	$41,806
PS 2015 (#12)	$200	$40	$0	$3,645	$3,034	***	***	***	***	***	***	***	***	$67,737	$74,656
GR 2006 (#13)	$200	$110	$1,422	$1,293	$3,032	***	***	***	***	***	***	***	***	$63,218	$69,275
GR 2015 (#14)	$300	$175	$0	$4,025	$6,034	***	***	***	***	***	***	***	***	$112,643	$123,177
Total Irr 2006 (#15)	1,000	400	380	126	83	***	***	***	***	***	***	***	***	21,679	23,668
Total Irr 2015 (#16)	1,300	500	0	151	83	***	***	***	***	***	***	***	***	24,110	26,144
Cropland Irr 2006 (#17)	650	300	380	92	83	***	***	***	***	***	***	***	***	16,306	17,811
Cropland Irr 2015 (#18)	800	300	0	129	83	***	***	***	***	***	***	***	***	19,294	20,606
Water usage 2006 (#19)	1,500	750	700,000	33,288	126,000	***	***	***	***	***	***	***	***	30,665,783	31,527,321
Water usage 2015 (#20)	2,000	1,000	0	41,065	126,000	***	***	***	***	***	***	***	***	36,899,200	37,069,265
PS W/O water (#21)	0	0	361	327	0	***	***	***	***	***	***	***	***	232	920
GR W/O water (#22)	0	0	1,067	327	0	***	***	***	***	***	***	***	***	441	1,835
Total acres W/O water (#23)	0	0	450	59	0	***	***	***	***	***	***	***	***	4,306	4,815
Cropland W/O water (#24)	0	0	380	29	0	***	***	***	***	***	***	***	***	1,464	1,873
Land value W/O Water #25)	$4,000	$10,000	$28,000	$29,925	$4,620	***	***	***	***	***	***	***	***	$720,611	$797,156
Home value W/O water (#26)	$1,000	$2,000	$0	$5,981	$1,000	***	***	***	***	***	***	***	***	$3,950	$13,931
Other value W/O water (#27)	$2,000	$2,000	$2,000	$1,135	$240	***	***	***	***	***	***	***	***	$15,711	$23,086
Land value 12/31/2006 (#28)	$6,500	$20,000	$28,000	$34,250	$4,620	***	***	***	***	***	***	***	***	$737,605	$830,975
Home value 12/31/2006(#29)	$1,000	$2,000	$0	$5,981	$1,000	***	***	***	***	***	***	***	***	$4,923	$14,904
Other value 12/31/2006 (#30)	$2,000	$2,500	$2,000	$1,950	$210	***	***	***	***	***	***	***	***	$89,839	$98,499
Total population (#31)	30	30	50	27	65	***	***	***	***	***	***	***	***	904	1,106
Peak workers (#32)	28	28	30	20	60	***	***	***	***	***	***	***	***	795	961
Mode workers (#33)	28	28	30	19	51	***	***	***	***	***	***	***	***	722	878
Operations	1	1	2	18	0										

*** Reservoirs aggregated to protect the privacy of the owners

MAUI COUNTY

Reservoir Name	Kualapuu	Waikamoi Dam No. 2 Piiholo 50 MG Reservoir Olinda Happy Valley Flood Prevention Kahana Napili 4-5 Desilting Basin Napili 2-3 Desilting Basin Honokowai Structure #8 Koapala Basin Kahakapao Maui County Water West	Peahi Papaaea Kaupakulua Kapalaalaea Haiku Pauwela Kolea	14, 15, 20, 21, 22, 24, 25, 30, 33, 40, 42, 52, 60, 61, 70, 73, 74, 80, 81, 82, 84, 90, 92	Horner Hanakaoo	Honokawai Upper Field 30 Upper Field 14 Puu Koa Maui Field 290 Middle Field 14 Kaili ili	Kehalani Offsite Retention Basin	Wahikului Kahoma	Maui County Total
	HDOA	Maui County, Public Works	East Maui Irrigation (A&B)	HC & S (A&B)	Kaanapali Development	Maui Land & Pineapple	Stanford Carr	West Maui Land	
Reservoir Number	HI00041	HI00046, HI00047, HI00048, HI00125, HI00126, HI00127, HI00128, HI00130, HI00134, HI00138, HI00144	HI00091, HI00092, HI00093, HI00094, HI00095, HI00096, HI00097	HI00068, HI00069, HI00070, HI00071, HI00072, HI00073, HI00074, HI00075, HI00076, HI00077, HI00078, HI00079, HI00080, HI00081, HI00082, HI00083, HI00084, HI00085, HI00086, HI00087, HI00088, HI00089, HI00090	HI00054 HI00056	HI00058 HI00059 HI00132 HI00133 HI00139 HI00142 HI00143	HI00141	HI00055 HI00057	
No of Dams	1	11	7	23	2	7	1	2	54
Max Volume (acre-feet)	5,082	1,166	1,034	2,911	118	121	490	108	11,030
Max Volume (M gallons)	1,656	380	337	949	38	39	160	35	3,594
Total Acres 2006 (#7)	3,160	46,241	58,100*		***		***	***	107,501
Total Acres 2015 (#8)	3,598	47,217			***		***	***	
Cropland 2006 (#9)	2,260	4,061	40,100*		***	33,000**	***	***	79,421
Cropland 2015 (#10)	2,637	4,403			***		***	***	
PS 2006 (#11)	$12,859	$17,119			***		***	***	
PS 2015 (#12)	$16,045	$19,620			***		***	***	
GR 2006 (#13)	$14,117	$22,275	$127,400*		***	69,400**	***	***	$233,192
GR 2015 (#14)	$18,720	$25,107			***		***	***	
Total Irr 2006 (#15)	2,400	12,075			***		***	***	
Total Irr 2015 (#16)	2,750	12,864			***		***	***	
Cropland Irr 2006 (#17)	2,250	3,298			***		***	***	
Cropland Irr 2015 (#18)	2,550	3,349			***		***	***	
Water usage 2006 (#19)	897,410	631,027			***		***	***	
Water usage 2015 (#20)	1,058,330	645,756			***		***	***	
PS W/O water (#21)	34	2,232			***		***	***	
GR W/O water (#22)	34	7,824			***		***	***	
Total acres W/O water (#23)	84	6,523			***		***	***	
Cropland W/O water (#24)	34	534			***		***	***	
Land value W/O Water #25)	$65,646	$285,162			***		***	***	
Home value W/O water (#26)	$7,680	$44,758			***		***	***	
Other value W/O water (#27)	$10,856	$24,994			***		***	***	
Land value 12/31/2006 (#28)	$61,152	$383,504			***		***	***	
Home value 12/31/2006(#29)	$8,270	$54,929			***		***	***	
Other value 12/31/2006 (#30)	$12,719	$29,605			***		***	***	
Total population (#31)	140	1,223	1,014*		***	370**	***	***	2,747
Peak workers (#32)	60	759			***		***	***	
Mode workers (#33)	50	437			***	309**	***	***	796
Operations	106	203			***		***	***	

* Alexander and Baldwin data from 2006 Annual Report

** Maui Land & Pineapple Company data from 2006 Annual Report

Appendix III

Detailed Economic Impacts Calculation per County

Table 3A - Hawaii: Detailed Economic Impact Calculation

	Hawaii	Final-demand multipliers (type II)			Output-driven multipliers			12.31 Output Impact		
		Output	Earnings	Total jobs (adjusted to 2006)	Output (col 1 / 1.1299)	Earnings (col 2 / 1.1299)	Total jobs (col 3 / 1.1299)	Output (col 4 x Output)	Earnings (col 5 x Output)	Employment (col 6 x Output)
		($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
HA-1	Agriculture	1.130	0.386	34.391	1.000	0.341	30.437	12.313	4.204	374.776
HA-2	Mining and construction	0.012	0.004	0.079	0.010	0.003	0.070	0.127	0.041	0.857
HA-3	Food processing	0.002	0.000	0.019	0.002	0.000	0.017	0.022	0.004	0.210
HA-4	Other manufacturing	0.006	0.002	0.048	0.005	0.001	0.043	0.063	0.017	0.524
HA-5	Transportation	0.019	0.007	0.187	0.017	0.006	0.165	0.211	0.071	2.033
HA-6	Information	0.010	0.003	0.082	0.009	0.003	0.073	0.111	0.034	0.897
HA-7	Utilities	0.033	0.005	0.068	0.029	0.005	0.060	0.360	0.056	0.737
HA-8	Wholesale trade	0.026	0.010	0.289	0.023	0.009	0.256	0.286	0.105	3.155
HA-9	Retail trade	0.066	0.019	0.903	0.058	0.017	0.799	0.714	0.209	9.838
HA-10	Finance and insurance	0.021	0.007	0.190	0.019	0.006	0.168	0.229	0.073	2.075
HA-11	Real estate and rentals	0.161	0.015	0.523	0.142	0.013	0.462	1.751	0.162	5.694
HA-12	Professional services	0.013	0.005	0.181	0.012	0.005	0.160	0.147	0.056	1.970
HA-13	Business services	0.014	0.006	0.332	0.012	0.005	0.293	0.148	0.066	3.613
HA-14	Educational services	0.003	0.001	0.066	0.003	0.001	0.058	0.032	0.015	0.717
HA-15	Health services	0.067	0.028	0.834	0.059	0.025	0.738	0.726	0.307	9.090
HA-16	Arts and entertainment	0.005	0.003	0.139	0.005	0.002	0.123	0.059	0.030	1.512
HA-17	Hotels	0.001	0.000	0.011	0.001	0.000	0.010	0.014	0.004	0.123
HA-18	Eating and drinking	0.013	0.004	0.233	0.011	0.003	0.206	0.139	0.041	2.539
HA-19	Other services	0.022	0.009	0.537	0.019	0.008	0.475	0.237	0.100	5.852
HA-20	government	0.015	0.010	0.256	0.013	0.009	0.227	0.161	0.112	2.792
HO-1	Agriculture	0.002	0.001	0.033	0.002	0.001	0.029	0.021	0.009	0.360
HO-2	Mining and construction	0.002	0.001	0.012	0.002	0.001	0.011	0.022	0.008	0.132
HO-3	Food processing	0.008	0.001	0.050	0.007	0.001	0.044	0.088	0.014	0.547
HO-4	Other manufacturing	0.082	0.011	0.270	0.072	0.010	0.239	0.891	0.121	2.943
HO-5	Transportation	0.021	0.005	0.117	0.019	0.004	0.103	0.230	0.055	1.270
HO-6	Information	0.008	0.002	0.049	0.007	0.002	0.044	0.087	0.026	0.538
HO-7	Utilities	0.004	0.000	0.006	0.003	0.000	0.005	0.040	0.005	0.066
HO-8	Wholesale trade	0.038	0.012	0.266	0.033	0.010	0.235	0.409	0.129	2.898
HO-9	Retail trade	0.016	0.005	0.228	0.014	0.005	0.202	0.174	0.059	2.488
HO-10	Finance and insurance	0.023	0.006	0.121	0.021	0.005	0.107	0.255	0.062	1.320
HO-11	Real estate and rentals	0.024	0.002	0.061	0.021	0.001	0.054	0.258	0.017	0.665
HO-12	Professional services	0.015	0.007	0.148	0.013	0.006	0.131	0.166	0.079	1.610
HO-13	Business services	0.015	0.008	0.250	0.014	0.007	0.221	0.168	0.085	2.727
HO-14	Educational services	0.005	0.002	0.085	0.004	0.002	0.075	0.052	0.025	0.929
HO-15	Health services	0.017	0.008	0.193	0.015	0.007	0.171	0.189	0.087	2.100
HO-16	Arts and entertainment	0.002	0.001	0.051	0.002	0.001	0.045	0.020	0.010	0.550
HO-17	Hotels	0.005	0.002	0.043	0.004	0.002	0.038	0.055	0.019	0.469
HO-18	Eating and drinking	0.007	0.002	0.124	0.006	0.002	0.109	0.075	0.023	1.348
HO-19	Other services	0.006	0.002	0.107	0.006	0.002	0.095	0.071	0.027	1.166
HO-20	Government	0.004	0.002	0.051	0.003	0.002	0.045	0.041	0.025	0.559
KA-1	Agriculture	0.000	0.000	0.008	0.000	0.000	0.007	0.003	0.001	0.087
KA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.000	0.010
KA-3	Food processing	0.000	0.000	0.001	0.000	0.000	0.001	0.002	0.000	0.016
KA-4	Other manufacturing	0.001	0.000	0.010	0.001	0.000	0.009	0.010	0.005	0.106
KA-5	Transportation	0.001	0.000	0.007	0.001	0.000	0.006	0.007	0.002	0.075
KA-6	Information	0.000	0.000	0.002	0.000	0.000	0.001	0.003	0.001	0.017
KA-7	Utilities	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.000	0.004
KA-8	Wholesale trade	0.001	0.000	0.007	0.001	0.000	0.006	0.007	0.002	0.072
KA-9	Retail trade	0.000	0.000	0.007	0.000	0.000	0.006	0.005	0.002	0.076
KA-10	Finance and insurance	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.000	0.013
KA-11	Real estate and rentals	0.001	0.000	0.003	0.001	0.000	0.003	0.011	0.001	0.035
KA-12	Professional services	0.000	0.000	0.006	0.000	0.000	0.005	0.004	0.001	0.061
KA-13	Business services	0.001	0.000	0.014	0.001	0.000	0.012	0.007	0.004	0.152
KA-14	Educational services	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.004
KA-15	Health services	0.000	0.000	0.005	0.000	0.000	0.004	0.004	0.001	0.050
KA-16	Arts and entertainment	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.000	0.013
KA-17	Hotels	0.001	0.000	0.011	0.001	0.000	0.009	0.015	0.004	0.116
KA-18	Eating and drinking	0.000	0.000	0.006	0.000	0.000	0.006	0.004	0.001	0.071
KA-19	Other services	0.000	0.000	0.004	0.000	0.000	0.003	0.002	0.001	0.043
KA-20	Government	0.000	0.000	0.002	0.000	0.000	0.002	0.001	0.001	0.019
MA-1	Agriculture	0.001	0.000	0.015	0.001	0.000	0.013	0.008	0.003	0.165
MA-2	Mining and construction	0.000	0.000	0.002	0.000	0.000	0.002	0.003	0.001	0.020
MA-3	Food processing	0.001	0.000	0.005	0.001	0.000	0.005	0.010	0.002	0.059
MA-4	Other manufacturing	0.003	0.002	0.026	0.003	0.002	0.023	0.032	0.021	0.285
MA-5	Transportation	0.001	0.000	0.009	0.001	0.000	0.008	0.011	0.003	0.100
MA-6	Information	0.001	0.000	0.002	0.001	0.000	0.002	0.007	0.001	0.024
MA-7	Utilities	0.000	0.000	0.001	0.000	0.000	0.001	0.004	0.001	0.008
MA-8	Wholesale trade	0.001	0.000	0.011	0.001	0.000	0.010	0.011	0.004	0.119
MA-9	Retail trade	0.001	0.001	0.020	0.001	0.000	0.018	0.016	0.005	0.219
MA-10	Finance and insurance	0.000	0.000	0.004	0.000	0.000	0.003	0.005	0.001	0.040
MA-11	Real estate and rentals	0.002	0.000	0.007	0.002	0.000	0.006	0.022	0.001	0.073
MA-12	Professional services	0.001	0.000	0.007	0.000	0.000	0.007	0.006	0.002	0.080
MA-13	Business services	0.001	0.000	0.012	0.001	0.000	0.011	0.008	0.003	0.134
MA-14	Educational services	0.000	0.000	0.002	0.000	0.000	0.002	0.001	0.001	0.025
MA-15	Health services	0.001	0.000	0.007	0.001	0.000	0.006	0.007	0.003	0.078
MA-16	Arts and entertainment	0.000	0.000	0.004	0.000	0.000	0.003	0.002	0.001	0.040
MA-17	Hotels	0.003	0.001	0.028	0.003	0.001	0.025	0.035	0.012	0.309
MA-18	Eating and drinking	0.001	0.000	0.016	0.001	0.000	0.014	0.011	0.003	0.172
MA-19	Other services	0.001	0.000	0.009	0.000	0.000	0.008	0.006	0.002	0.098
MA-20	Government	0.000	0.000	0.002	0.000	0.000	0.001	0.001	0.001	0.017
	TOTAL	1.969	0.614	42	1.743	0.543	37	21.456	6.689	457

Table 3B - Honolulu: Detailed Economic Impact Calculation

	Honolulu	Final-demand multipliers (type II)			Output-driven multipliers			76.455 Output Impact		
		Output	Earnings	Total jobs (adjusted to 2006)	Output (col 1 / 1.0826)	Earnings (col 2 / 1.0826)	Total jobs (col 3 / 1.0826)	Output (col 4 x Output)	Earnings (col 5 x Output)	Employment (col 6 x Output)
		($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
HA-1	Agriculture	0.004	0.001	0.122	0.004	0.001	0.112	0.282	0.096	8.595
HA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.016	0.005	0.105
HA-3	Food processing	0.002	0.000	0.019	0.002	0.000	0.017	0.137	0.025	1.319
HA-4	Other manufacturing	0.002	0.001	0.016	0.002	0.000	0.015	0.140	0.037	1.163
HA-5	Transportation	0.001	0.000	0.007	0.001	0.000	0.006	0.050	0.017	0.481
HA-6	Information	0.000	0.000	0.003	0.000	0.000	0.003	0.025	0.008	0.204
HA-7	Utilities	0.001	0.000	0.001	0.001	0.000	0.001	0.042	0.007	0.087
HA-8	Wholesale trade	0.001	0.000	0.013	0.001	0.000	0.012	0.083	0.031	0.921
HA-9	Retail trade	0.002	0.001	0.028	0.002	0.001	0.026	0.143	0.042	1.976
HA-10	Finance and insurance	0.001	0.000	0.005	0.001	0.000	0.005	0.042	0.013	0.384
HA-11	Real estate and rentals	0.003	0.000	0.010	0.003	0.000	0.009	0.209	0.019	0.681
HA-12	Professional services	0.001	0.000	0.012	0.001	0.000	0.011	0.060	0.023	0.813
HA-13	Business services	0.001	0.000	0.023	0.001	0.000	0.022	0.068	0.030	1.652
HA-14	Educational services	0.000	0.000	0.002	0.000	0.000	0.002	0.008	0.004	0.173
HA-15	Health services	0.001	0.000	0.015	0.001	0.000	0.013	0.082	0.035	1.029
HA-16	Arts and entertainment	0.000	0.000	0.005	0.000	0.000	0.004	0.013	0.006	0.329
HA-17	Hotels	0.004	0.001	0.038	0.004	0.001	0.035	0.302	0.098	2.697
HA-18	Eating and drinking	0.001	0.000	0.010	0.000	0.000	0.009	0.038	0.011	0.687
HA-19	Other services	0.000	0.000	0.012	0.000	0.000	0.011	0.035	0.015	0.870
HA-20	government	0.000	0.000	0.004	0.000	0.000	0.004	0.016	0.011	0.276
HO-1	**Agriculture**	**1.083**	**0.456**	**18.654**	**1.000**	**0.422**	**17.230**	**76.455**	**32.229**	**1317.334**
HO-2	Mining and construction	0.017	0.006	0.099	0.015	0.005	0.092	1.174	0.410	7.005
HO-3	Food processing	0.019	0.003	0.119	0.018	0.003	0.110	1.363	0.215	8.439
HO-4	Other manufacturing	0.068	0.009	0.224	0.063	0.009	0.207	4.792	0.652	15.820
HO-5	Transportation	0.048	0.011	0.263	0.044	0.011	0.243	3.371	0.809	18.607
HO-6	Information	0.033	0.010	0.204	0.030	0.009	0.189	2.322	0.705	14.431
HO-7	Utilities	0.027	0.003	0.044	0.025	0.003	0.041	1.901	0.244	3.119
HO-8	Wholesale trade	0.069	0.022	0.491	0.064	0.020	0.453	4.897	1.540	34.667
HO-9	Retail trade	0.077	0.026	1.102	0.071	0.024	1.018	5.444	1.845	77.832
HO-10	Finance and insurance	0.075	0.018	0.390	0.070	0.017	0.360	5.324	1.291	27.539
HO-11	Real estate and rentals	0.180	0.012	0.465	0.166	0.011	0.429	12.723	0.821	32.834
HO-12	Professional services	0.038	0.018	0.365	0.035	0.017	0.337	2.659	1.267	25.791
HO-13	Business services	0.048	0.024	0.770	0.044	0.022	0.711	3.359	1.693	54.381
HO-14	Educational services	0.013	0.006	0.231	0.012	0.006	0.213	0.908	0.444	16.301
HO-15	Health services	0.091	0.042	1.008	0.084	0.038	0.931	6.421	2.934	71.216
HO-16	Arts and entertainment	0.006	0.003	0.166	0.006	0.003	0.154	0.424	0.206	11.744
HO-17	Hotels	0.001	0.000	0.011	0.001	0.000	0.010	0.093	0.032	0.792
HO-18	Eating and drinking	0.029	0.009	0.524	0.027	0.008	0.484	2.047	0.624	36.985
HO-19	Other services	0.040	0.015	0.668	0.037	0.014	0.617	2.853	1.087	47.189
HO-20	Government	0.023	0.014	0.318	0.022	0.013	0.294	1.656	0.998	22.465
KA-1	Agriculture	0.002	0.001	0.061	0.002	0.001	0.056	0.144	0.041	4.317
KA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.013	0.004	0.097
KA-3	Food processing	0.000	0.000	0.003	0.000	0.000	0.003	0.019	0.004	0.194
KA-4	Other manufacturing	0.000	0.000	0.004	0.000	0.000	0.004	0.029	0.014	0.305
KA-5	Transportation	0.001	0.000	0.005	0.000	0.000	0.005	0.037	0.011	0.385
KA-6	Information	0.000	0.000	0.002	0.000	0.000	0.002	0.029	0.006	0.156
KA-7	Utilities	0.000	0.000	0.001	0.000	0.000	0.001	0.020	0.003	0.040
KA-8	Wholesale trade	0.001	0.000	0.008	0.001	0.000	0.007	0.054	0.013	0.540
KA-9	Retail trade	0.001	0.000	0.009	0.001	0.000	0.008	0.040	0.015	0.649
KA-10	Finance and insurance	0.000	0.000	0.002	0.000	0.000	0.002	0.018	0.005	0.175
KA-11	Real estate and rentals	0.002	0.000	0.005	0.002	0.000	0.005	0.119	0.010	0.363
KA-12	Professional services	0.000	0.000	0.006	0.000	0.000	0.006	0.034	0.010	0.455
KA-13	Business services	0.001	0.000	0.016	0.001	0.000	0.015	0.051	0.028	1.110
KA-14	Educational services	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.018
KA-15	Health services	0.000	0.000	0.007	0.000	0.000	0.006	0.034	0.014	0.478
KA-16	Arts and entertainment	0.000	0.000	0.002	0.000	0.000	0.001	0.005	0.003	0.114
KA-17	Hotels	0.002	0.001	0.016	0.002	0.001	0.015	0.140	0.039	1.111
KA-18	Eating and drinking	0.000	0.000	0.007	0.000	0.000	0.006	0.024	0.007	0.467
KA-19	Other services	0.000	0.000	0.006	0.000	0.000	0.006	0.017	0.007	0.438
KA-20	Government	0.000	0.000	0.002	0.000	0.000	0.002	0.009	0.006	0.157
MA-1	Agriculture	0.002	0.001	0.051	0.002	0.001	0.047	0.167	0.067	3.629
MA-2	Mining and construction	0.000	0.000	0.003	0.000	0.000	0.003	0.027	0.009	0.206
MA-3	Food processing	0.001	0.000	0.007	0.001	0.000	0.006	0.082	0.015	0.495
MA-4	Other manufacturing	0.002	0.001	0.015	0.002	0.001	0.014	0.117	0.076	1.042
MA-5	Transportation	0.001	0.000	0.008	0.001	0.000	0.007	0.060	0.018	0.562
MA-6	Information	0.001	0.000	0.003	0.001	0.000	0.003	0.064	0.009	0.223
MA-7	Utilities	0.001	0.000	0.001	0.001	0.000	0.001	0.040	0.005	0.074
MA-8	Wholesale trade	0.002	0.001	0.017	0.001	0.000	0.016	0.113	0.037	1.218
MA-9	Retail trade	0.002	0.001	0.022	0.001	0.001	0.020	0.112	0.039	1.558
MA-10	Finance and insurance	0.000	0.000	0.004	0.000	0.000	0.003	0.035	0.009	0.260
MA-11	Real estate and rentals	0.003	0.000	0.010	0.003	0.000	0.009	0.215	0.011	0.711
MA-12	Professional services	0.001	0.000	0.011	0.001	0.000	0.010	0.057	0.021	0.764
MA-13	Business services	0.001	0.000	0.019	0.001	0.000	0.018	0.083	0.032	1.353
MA-14	Educational services	0.000	0.000	0.002	0.000	0.000	0.001	0.006	0.002	0.106
MA-15	Health services	0.001	0.000	0.011	0.001	0.000	0.010	0.068	0.028	0.754
MA-16	Arts and entertainment	0.000	0.000	0.005	0.000	0.000	0.005	0.017	0.008	0.354
MA-17	Hotels	0.007	0.002	0.059	0.006	0.002	0.054	0.470	0.158	4.162
MA-18	Eating and drinking	0.001	0.000	0.013	0.001	0.000	0.012	0.062	0.019	0.948
MA-19	Other services	0.001	0.000	0.012	0.001	0.000	0.012	0.052	0.018	0.880
MA-20	Government	0.000	0.000	0.002	0.000	0.000	0.002	0.008	0.006	0.144
	TOTAL	**2.049**	**0.728**	**27**	**1.892**	**0.672**	**25**	**144.668**	**51.409**	**1900**

Table 3C - Kauai: Detailed Economic Impact Calculation

	Kauai	Final-demand multipliers (type II)			Output-driven multipliers			67.44 Output Impact		
		Output	Earnings	Total jobs (adjusted to 2006)	Output (col 1 / 1.0438)	Earnings (col 2 / 1.0438)	Total jobs (col 3 / 1.0438)	Output (col 4 x Output)	Earnings (col 5 x Output)	Employment (col 6 x Output)
		($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
HA-1	Agriculture	0.001	0.000	0.030	0.001	0.000	0.029	0.063	0.022	1.923
HA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.000	0.005	0.002	0.033
HA-3	Food processing	0.001	0.000	0.005	0.000	0.000	0.005	0.032	0.006	0.313
HA-4	Other manufacturing	0.001	0.000	0.005	0.001	0.000	0.005	0.042	0.011	0.346
HA-5	Transportation	0.000	0.000	0.003	0.000	0.000	0.002	0.017	0.006	0.164
HA-6	Information	0.000	0.000	0.001	0.000	0.000	0.001	0.010	0.003	0.080
HA-7	Utilities	0.000	0.000	0.000	0.000	0.000	0.000	0.013	0.002	0.027
HA-8	Wholesale trade	0.000	0.000	0.003	0.000	0.000	0.003	0.019	0.007	0.215
HA-9	Retail trade	0.001	0.000	0.010	0.001	0.000	0.010	0.048	0.014	0.664
HA-10	Finance and insurance	0.000	0.000	0.001	0.000	0.000	0.001	0.010	0.003	0.087
HA-11	Real estate and rentals	0.001	0.000	0.003	0.001	0.000	0.003	0.059	0.006	0.193
HA-12	Professional services	0.000	0.000	0.004	0.000	0.000	0.004	0.021	0.008	0.287
HA-13	Business services	0.000	0.000	0.009	0.000	0.000	0.008	0.023	0.010	0.559
HA-14	Educational services	0.000	0.000	0.002	0.000	0.000	0.002	0.006	0.003	0.145
HA-15	Health services	0.000	0.000	0.004	0.000	0.000	0.004	0.022	0.009	0.278
HA-16	Arts and entertainment	0.000	0.000	0.004	0.000	0.000	0.004	0.009	0.005	0.240
HA-17	Hotels	0.002	0.000	0.014	0.001	0.000	0.013	0.098	0.032	0.874
HA-18	Eating and drinking	0.000	0.000	0.007	0.000	0.000	0.006	0.023	0.007	0.428
HA-19	Other services	0.000	0.000	0.006	0.000	0.000	0.006	0.016	0.007	0.388
HA-20	government	0.000	0.000	0.001	0.000	0.000	0.001	0.005	0.003	0.085
HO-1	Agriculture	0.002	0.001	0.034	0.002	0.001	0.032	0.126	0.053	2.176
HO-2	Mining and construction	0.002	0.001	0.009	0.002	0.001	0.009	0.102	0.036	0.611
HO-3	Food processing	0.005	0.001	0.029	0.005	0.001	0.028	0.304	0.048	1.880
HO-4	Other manufacturing	0.061	0.008	0.203	0.059	0.008	0.195	3.973	0.541	13.118
HO-5	Transportation	0.016	0.004	0.089	0.015	0.004	0.085	1.037	0.249	5.723
HO-6	Information	0.006	0.002	0.034	0.005	0.002	0.033	0.358	0.109	2.225
HO-7	Utilities	0.003	0.000	0.005	0.003	0.000	0.005	0.186	0.024	0.305
HO-8	Wholesale trade	0.031	0.010	0.217	0.029	0.009	0.208	1.985	0.624	14.050
HO-9	Retail trade	0.016	0.005	0.229	0.015	0.005	0.220	1.037	0.351	14.819
HO-10	Finance and insurance	0.023	0.005	0.117	0.022	0.005	0.112	1.465	0.355	7.579
HO-11	Real estate and rentals	0.019	0.001	0.049	0.018	0.001	0.047	1.221	0.079	3.151
HO-12	Professional services	0.010	0.005	0.099	0.010	0.005	0.095	0.661	0.315	6.414
HO-13	Business services	0.011	0.006	0.179	0.011	0.005	0.171	0.714	0.360	11.562
HO-14	Educational services	0.003	0.001	0.049	0.003	0.001	0.047	0.175	0.086	3.151
HO-15	Health services	0.012	0.005	0.133	0.011	0.005	0.127	0.773	0.353	8.576
HO-16	Arts and entertainment	0.001	0.001	0.038	0.001	0.001	0.037	0.089	0.043	2.470
HO-17	Hotels	0.004	0.001	0.035	0.004	0.001	0.034	0.267	0.093	2.279
HO-18	Eating and drinking	0.005	0.002	0.097	0.005	0.002	0.093	0.345	0.105	6.241
HO-19	Other services	0.007	0.003	0.112	0.006	0.002	0.107	0.437	0.166	7.227
HO-20	Government	0.003	0.002	0.040	0.003	0.002	0.038	0.191	0.115	2.596
KA-1	Agriculture	1.044	0.299	31.387	1.000	0.286	30.071	67.440	19.289	2028.005
KA-2	Mining and construction	0.024	0.008	0.182	0.023	0.007	0.175	1.536	0.504	11.781
KA-3	Food processing	0.001	0.000	0.013	0.001	0.000	0.012	0.079	0.015	0.811
KA-4	Other manufacturing	0.002	0.001	0.021	0.002	0.001	0.020	0.129	0.065	1.359
KA-5	Transportation	0.022	0.006	0.228	0.021	0.006	0.219	1.418	0.417	14.761
KA-6	Information	0.016	0.004	0.088	0.016	0.003	0.085	1.048	0.227	5.711
KA-7	Utilities	0.034	0.004	0.067	0.032	0.004	0.064	2.167	0.288	4.301
KA-8	Wholesale trade	0.016	0.004	0.161	0.015	0.004	0.154	1.040	0.256	10.406
KA-9	Retail trade	0.048	0.017	0.772	0.046	0.017	0.739	3.098	1.123	49.855
KA-10	Finance and insurance	0.018	0.005	0.179	0.017	0.005	0.171	1.160	0.318	11.559
KA-11	Real estate and rentals	0.200	0.018	0.611	0.191	0.017	0.585	12.901	1.138	39.465
KA-12	Professional services	0.013	0.004	0.176	0.012	0.004	0.168	0.837	0.255	11.354
KA-13	Business services	0.018	0.010	0.384	0.017	0.009	0.368	1.134	0.633	24.805
KA-14	Educational services	0.001	0.000	0.014	0.001	0.000	0.013	0.048	0.026	0.908
KA-15	Health services	0.044	0.018	0.616	0.042	0.018	0.590	2.818	1.192	39.823
KA-16	Arts and entertainment	0.004	0.002	0.084	0.004	0.002	0.081	0.257	0.120	5.432
KA-17	Hotels	0.001	0.000	0.005	0.001	0.000	0.004	0.038	0.010	0.297
KA-18	Eating and drinking	0.011	0.003	0.205	0.010	0.003	0.197	0.693	0.204	13.254
KA-19	Other services	0.021	0.008	0.523	0.020	0.008	0.501	1.338	0.538	33.764
KA-20	Government	0.012	0.008	0.208	0.012	0.008	0.199	0.803	0.549	13.424
MA-1	Agriculture	0.001	0.000	0.016	0.001	0.000	0.015	0.048	0.019	1.039
MA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.012	0.004	0.093
MA-3	Food processing	0.001	0.000	0.003	0.001	0.000	0.003	0.037	0.007	0.225
MA-4	Other manufacturing	0.002	0.001	0.014	0.002	0.001	0.013	0.102	0.067	0.909
MA-5	Transportation	0.001	0.000	0.005	0.000	0.000	0.005	0.033	0.010	0.307
MA-6	Information	0.001	0.000	0.002	0.000	0.000	0.002	0.033	0.005	0.116
MA-7	Utilities	0.000	0.000	0.001	0.000	0.000	0.001	0.019	0.003	0.036
MA-8	Wholesale trade	0.001	0.000	0.007	0.001	0.000	0.007	0.044	0.015	0.474
MA-9	Retail trade	0.001	0.000	0.017	0.001	0.000	0.016	0.079	0.027	1.095
MA-10	Finance and insurance	0.000	0.000	0.001	0.000	0.000	0.001	0.013	0.003	0.095
MA-11	Real estate and rentals	0.002	0.000	0.005	0.001	0.000	0.005	0.098	0.005	0.326
MA-12	Professional services	0.000	0.000	0.006	0.000	0.000	0.005	0.027	0.010	0.360
MA-13	Business services	0.001	0.000	0.010	0.001	0.000	0.009	0.039	0.015	0.638
MA-14	Educational services	0.000	0.000	0.001	0.000	0.000	0.001	0.003	0.001	0.057
MA-15	Health services	0.000	0.000	0.005	0.000	0.000	0.005	0.030	0.012	0.331
MA-16	Arts and entertainment	0.000	0.000	0.004	0.000	0.000	0.004	0.013	0.006	0.272
MA-17	Hotels	0.003	0.001	0.025	0.003	0.001	0.024	0.182	0.061	1.610
MA-18	Eating and drinking	0.001	0.000	0.015	0.001	0.000	0.014	0.061	0.018	0.938
MA-19	Other services	0.001	0.000	0.009	0.001	0.000	0.009	0.035	0.012	0.589
MA-20	Government	0.000	0.000	0.001	0.000	0.000	0.001	0.004	0.003	0.071
	TOTAL	1.809	0.491	38	1.733	0.471	36	116.884	31.742	2454

Table 3D - Maui: Detailed Economic Impact Calculation

	Maui	Final-demand multipliers (type II)			Output-driven multipliers			Impact		
		Output	Earnings	Total jobs (adjusted to 2006)	Output (col 1 / 1.0986)	Earnings (col 2 / 1.0986)	Total jobs (col 3 / 1.0986)	Output (col 4 x Output)	Earnings (col 5 x Output)	Employment (col 6 x Output)
		($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)	($ mil)	($ mil)	(Jobs)
		Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7	Col. 8	Col. 9
HA-1	Agriculture	0.001	0.000	0.043	0.001	0.000	0.039	0.110	0.038	3.354
HA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.011	0.003	0.071
HA-3	Food processing	0.001	0.000	0.006	0.001	0.000	0.006	0.049	0.009	0.472
HA-4	Other manufacturing	0.002	0.001	0.019	0.002	0.001	0.017	0.175	0.046	1.459
HA-5	Transportation	0.001	0.000	0.005	0.000	0.000	0.005	0.043	0.014	0.412
HA-6	Information	0.000	0.000	0.003	0.000	0.000	0.002	0.025	0.008	0.204
HA-7	Utilities	0.000	0.000	0.001	0.000	0.000	0.001	0.029	0.004	0.060
HA-8	Wholesale trade	0.001	0.000	0.015	0.001	0.000	0.013	0.104	0.038	1.145
HA-9	Retail trade	0.001	0.000	0.015	0.001	0.000	0.014	0.087	0.025	1.198
HA-10	Finance and insurance	0.001	0.000	0.005	0.000	0.000	0.004	0.043	0.013	0.386
HA-11	Real estate and rentals	0.002	0.000	0.006	0.002	0.000	0.005	0.133	0.012	0.433
HA-12	Professional services	0.001	0.000	0.012	0.001	0.000	0.011	0.069	0.027	0.930
HA-13	Business services	0.001	0.000	0.016	0.001	0.000	0.014	0.050	0.022	1.223
HA-14	Educational services	0.000	0.000	0.005	0.000	0.000	0.004	0.016	0.007	0.353
HA-15	Health services	0.001	0.000	0.008	0.001	0.000	0.008	0.052	0.022	0.649
HA-16	Arts and entertainment	0.000	0.000	0.003	0.000	0.000	0.003	0.011	0.005	0.269
HA-17	Hotels	0.002	0.001	0.022	0.002	0.001	0.020	0.193	0.062	1.720
HA-18	Eating and drinking	0.000	0.000	0.008	0.000	0.000	0.008	0.036	0.011	0.653
HA-19	Other services	0.000	0.000	0.011	0.000	0.000	0.010	0.035	0.015	0.871
HA-20	government	0.000	0.000	0.002	0.000	0.000	0.002	0.011	0.008	0.195
HO-1	Agriculture	0.002	0.001	0.032	0.002	0.001	0.029	0.144	0.061	2.488
HO-2	Mining and construction	0.002	0.001	0.011	0.002	0.001	0.010	0.146	0.051	0.869
HO-3	Food processing	0.006	0.001	0.035	0.005	0.001	0.032	0.447	0.070	2.766
HO-4	Other manufacturing	0.072	0.010	0.238	0.066	0.009	0.217	5.626	0.766	18.575
HO-5	Transportation	0.020	0.005	0.108	0.018	0.004	0.098	1.529	0.367	8.439
HO-6	Information	0.007	0.002	0.042	0.006	0.002	0.038	0.529	0.161	3.286
HO-7	Utilities	0.003	0.000	0.005	0.003	0.000	0.005	0.260	0.033	0.427
HO-8	Wholesale trade	0.030	0.010	0.215	0.028	0.009	0.196	2.375	0.747	16.813
HO-9	Retail trade	0.017	0.006	0.240	0.015	0.005	0.218	1.309	0.444	18.715
HO-10	Finance and insurance	0.025	0.006	0.131	0.023	0.006	0.119	1.976	0.479	10.219
HO-11	Real estate and rentals	0.022	0.001	0.056	0.020	0.001	0.051	1.698	0.110	4.383
HO-12	Professional services	0.013	0.006	0.130	0.012	0.006	0.118	1.048	0.499	10.163
HO-13	Business services	0.013	0.007	0.213	0.012	0.006	0.194	1.027	0.518	16.623
HO-14	Educational services	0.004	0.002	0.066	0.003	0.002	0.060	0.289	0.141	5.186
HO-15	Health services	0.016	0.007	0.178	0.015	0.007	0.162	1.256	0.574	13.925
HO-16	Arts and entertainment	0.001	0.001	0.038	0.001	0.001	0.034	0.106	0.051	2.933
HO-17	Hotels	0.005	0.002	0.046	0.005	0.002	0.041	0.416	0.145	3.556
HO-18	Eating and drinking	0.006	0.002	0.110	0.006	0.002	0.100	0.476	0.145	8.608
HO-19	Other services	0.007	0.003	0.119	0.007	0.003	0.109	0.563	0.214	9.312
HO-20	Government	0.003	0.002	0.047	0.003	0.002	0.043	0.271	0.163	3.673
KA-1	Agriculture	0.000	0.000	0.010	0.000	0.000	0.009	0.026	0.008	0.791
KA-2	Mining and construction	0.000	0.000	0.001	0.000	0.000	0.001	0.009	0.003	0.069
KA-3	Food processing	0.000	0.000	0.002	0.000	0.000	0.002	0.014	0.003	0.145
KA-4	Other manufacturing	0.000	0.000	0.005	0.000	0.000	0.004	0.035	0.018	0.373
KA-5	Transportation	0.000	0.000	0.005	0.000	0.000	0.004	0.034	0.010	0.355
KA-6	Information	0.000	0.000	0.002	0.000	0.000	0.002	0.025	0.005	0.136
KA-7	Utilities	0.000	0.000	0.000	0.000	0.000	0.000	0.015	0.002	0.029
KA-8	Wholesale trade	0.001	0.000	0.006	0.001	0.000	0.005	0.043	0.011	0.431
KA-9	Retail trade	0.000	0.000	0.007	0.000	0.000	0.006	0.034	0.012	0.541
KA-10	Finance and insurance	0.000	0.000	0.001	0.000	0.000	0.001	0.009	0.002	0.085
KA-11	Real estate and rentals	0.001	0.000	0.003	0.001	0.000	0.003	0.077	0.007	0.234
KA-12	Professional services	0.001	0.000	0.008	0.001	0.000	0.007	0.044	0.014	0.602
KA-13	Business services	0.001	0.000	0.011	0.000	0.000	0.010	0.039	0.022	0.857
KA-14	Educational services	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.023
KA-15	Health services	0.000	0.000	0.004	0.000	0.000	0.003	0.021	0.009	0.291
KA-16	Arts and entertainment	0.000	0.000	0.001	0.000	0.000	0.001	0.004	0.002	0.094
KA-17	Hotels	0.001	0.000	0.012	0.001	0.000	0.011	0.114	0.032	0.903
KA-18	Eating and drinking	0.000	0.000	0.009	0.000	0.000	0.008	0.035	0.010	0.675
KA-19	Other services	0.000	0.000	0.004	0.000	0.000	0.004	0.013	0.005	0.331
KA-20	Government	0.000	0.000	0.002	0.000	0.000	0.001	0.007	0.005	0.120
MA-1	Agriculture	1.099	0.439	23.937	1.000	0.400	21.789	85.788	34.282	1869.202
MA-2	Mining and construction	0.020	0.007	0.154	0.019	0.006	0.141	1.592	0.539	12.062
MA-3	Food processing	0.002	0.000	0.013	0.002	0.000	0.012	0.174	0.032	1.048
MA-4	Other manufacturing	0.006	0.004	0.051	0.005	0.003	0.046	0.443	0.290	3.956
MA-5	Transportation	0.022	0.006	0.203	0.020	0.006	0.185	1.690	0.502	15.853
MA-6	Information	0.033	0.005	0.113	0.030	0.004	0.103	2.553	0.371	8.857
MA-7	Utilities	0.025	0.003	0.047	0.023	0.003	0.043	1.967	0.264	3.662
MA-8	Wholesale trade	0.019	0.006	0.205	0.017	0.006	0.187	1.492	0.493	16.025
MA-9	Retail trade	0.064	0.022	0.897	0.059	0.020	0.816	5.028	1.746	70.043
MA-10	Finance and insurance	0.020	0.005	0.148	0.018	0.004	0.135	1.560	0.379	11.545
MA-11	Real estate and rentals	0.195	0.010	0.646	0.178	0.009	0.588	15.235	0.806	50.429
MA-12	Professional services	0.014	0.005	0.186	0.013	0.005	0.169	1.072	0.406	14.490
MA-13	Business services	0.017	0.007	0.282	0.016	0.006	0.256	1.343	0.520	22.002
MA-14	Educational services	0.003	0.001	0.050	0.002	0.001	0.045	0.207	0.079	3.903
MA-15	Health services	0.054	0.022	0.599	0.049	0.020	0.546	4.215	1.752	46.810
MA-16	Arts and entertainment	0.007	0.003	0.149	0.006	0.003	0.135	0.553	0.267	11.603
MA-17	Hotels	0.003	0.001	0.024	0.002	0.001	0.021	0.208	0.070	1.840
MA-18	Eating and drinking	0.018	0.005	0.277	0.016	0.005	0.252	1.413	0.424	21.616
MA-19	Other services	0.034	0.012	0.582	0.031	0.011	0.530	2.681	0.946	45.436
MA-20	Government	0.007	0.005	0.114	0.006	0.004	0.103	0.522	0.352	8.874
	TOTAL	1.961	0.651	31	1.785	0.593	28	153.106	50.830	2423