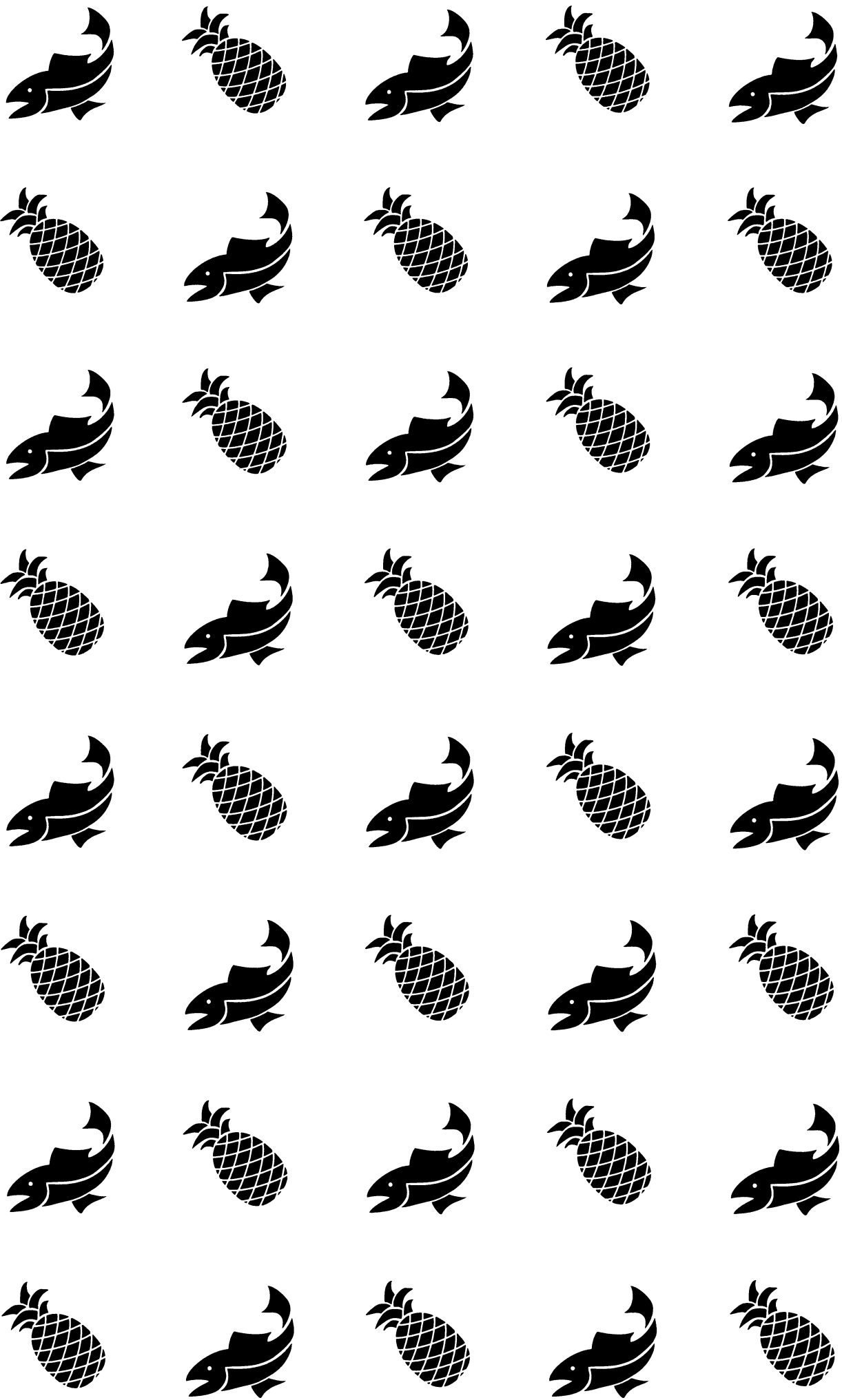


Agriculture & Aquaculture



Section 5

AGRICULTURE & AQUACULTURE

This section includes statistics on agriculture and aquaculture. The number of and statistics about farms are presented along with the value and distribution of farm and other land based herbaculture production. Fish catches and other aquaculture statistics are given.

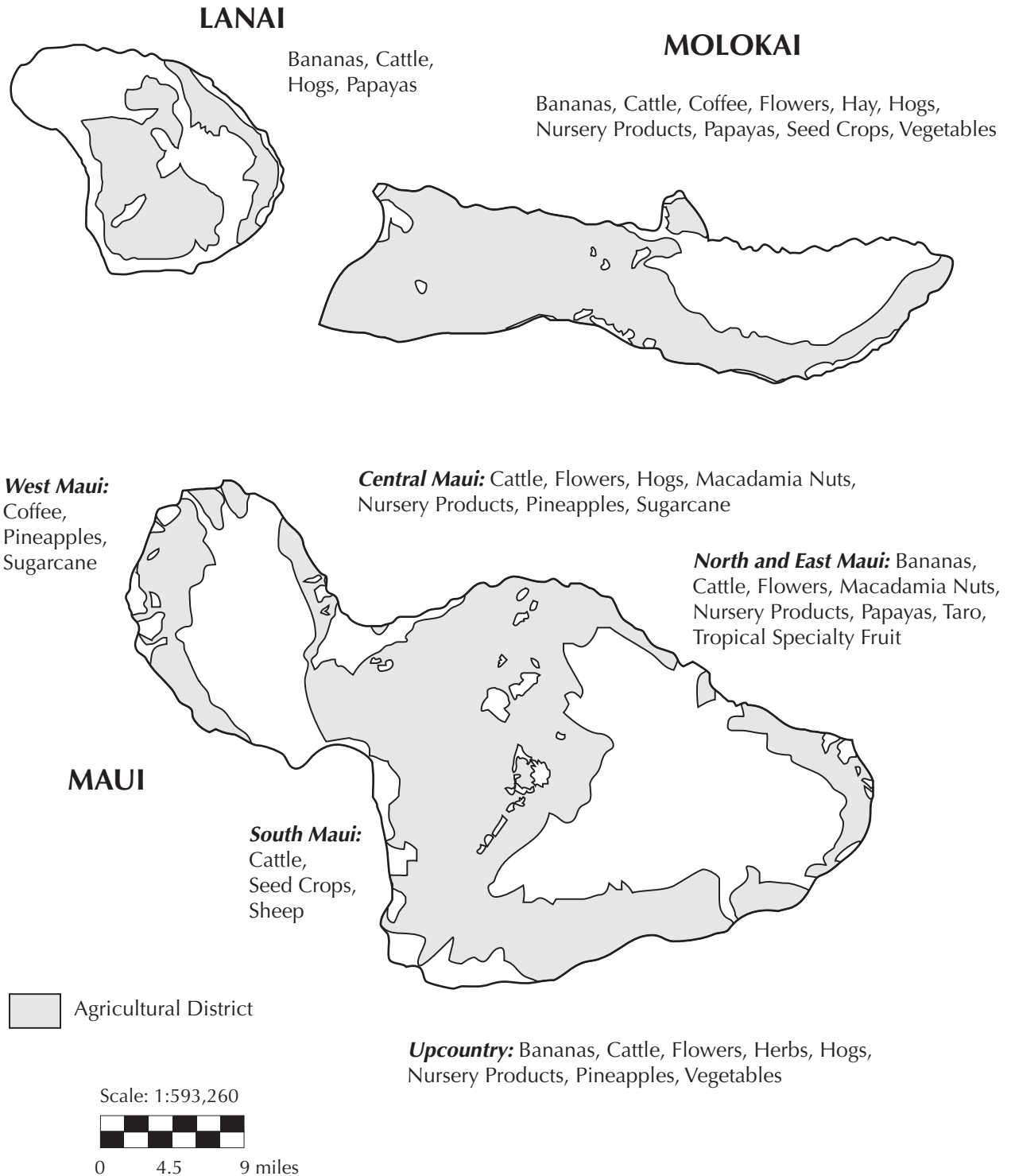
Agriculture remains an important element in Maui County's economy and land use patterns. Sugar and pineapple remain the largest crops, though the trend toward diversification of agriculture continues.

The value of commercially caught fish has been generally declining since 1986 and this trend continued through 1993, although there has been a rise since 1994. Commercial aquaculture continues to grow in importance.

The data in this section comes mainly from the U.S. Bureau of Census, the Hawaii Agriculture Statistics Service, specific crop producers, and the Hawaii State Department of Land and Natural Resources.

5.1.1

**AGRICULTURAL AREAS,
MAUI COUNTY**



Source: Hawaii Agricultural Statistics Service, *Statistics of Hawaii Agriculture*, 1997.

5.1.2

TENURE AND CHARACTERISTICS OF FARM OPERATORS AND TYPES OF FARM ORGANIZATION, MAUI COUNTY

	1987	1992	1997
Farms	722	850	806
Land In Farms (acres)	359,310	355,786	292,090
Tenure of Operator			
Full Owners			
Farms	397	503	460
Acres	89,698	118,137	81,616
Part Owners			
Farms	155	159	137
Acres	234,912	225,867	188,649
Owned land in farms (acres)	D	141,136	140,909
Rented land in farms (acres)	D	84,731	47,740
Tenants			
Farms	170	188	209
Acres	34,700	11,782	21,825
Operator Characteristics			
Place of Residence			
On farm operated	480	577	536
Not on farm operated	218	219	215
Not reported	44	54	55
Principal Occupation			
Farming	398	456	372
Other	324	394	434
Days of Work Off Farm			
None	264	298	290
Any	408	482	455
1 to 49 days	55	55	59
50 to 99 days	38	31	33
100 to 149 days	52	62	40
150 to 199 days	37	71	46
200 days or more	226	263	277
Not reported	50	70	61
Years on Present Farm			
2 years or less	80	44	42
3 or 4 years	77	136	47
5 to 9 years	151	171	171
10 years or more	296	360	406
Average years on present farm	12.7	13.1	14.3
Not reported	118	139	140

5.1.2

CONTINUED

	1987	1992	1997
Operator Characteristics (cont.)			
Age Group			
Under 25 years	2	2	7
25 to 34 years	75	44	24
35 to 44 years	199	259	182
45 to 54 years	119	221	270
55 to 59 years	63	50	107
60 to 64 years	95	62	59
65 to 69 years	74	74	45
70 years and over	95	138	112
Average age	52.0	52.6	53.0
Male			
Farms	626	737	681
Acres	346,566	318,121	275,346
Female			
Farms	96	113	125
Acres	12,744	37,665	16,744
Type of Organization			
Individual or Family (sole proprietorship)			
Farms	593	710	679
Acres	47,363	53,463	31,942
Partnership			
Farms	59	52	44
Acres	21,535	D	34,620
Corporation (family held)			
Farms	44	46	56
Acres	D	90,740	101,236
Corporation (other than family held)			
Farms	12	26	13
Acres	D	192,428	123,312
Other (cooperative, estate or trust, institutional, etc.)			
Farms	14	16	14
Acres	10,161	D	980

D: Withheld to avoid disclosing data for individual farms.

SOURCES: U.S. Bureau of the Census, *1987 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, AC87-A-11 (August 1989), chapter 2, table 10; *1992 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, AC92-A-11 (1994), chapter 2, table 11, p. 161-162; U.S. Department of Agriculture, National Agricultural Statistics Service, *1997 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, (1998), chapter 2, table 11, p. 163-164.

5.1.3

FARMS AND LAND IN FARMS, MAUI COUNTY

	1987	1992	1997
Farms	722	850	806
Land in Farms	359,310	355,786	292,090
Average size of farm (acres)	498	419	362
Median size of farm (acres)	NA	NA	6
Estimated Market Value of Land and Buildings¹			
Average per farm	873,008	1,118,184	818,342
Average per acre	1,754	2,671	2,258
Estimated Market Value of All Machinery and Equipment¹			
Average per farm	81,608	117,143	88,989
Farms by Size			
1 to 9 acres	365	505	468
10 to 49 acres	223	232	233
50 to 179 acres	79	60	48
180 to 499 acres	25	24	29
500 to 999 acres	5	3	5
1,000 acres or more	25	26	23
Total Cropland			
Farms	573	733	684
Acres	89,439	D	D
Harvested Cropland			
Farms	496	666	605
Acres	42,952	39,031	32,243
Irrigated Land			
Farms	410	541	480
Acres	67,198	61,549	35,031
Market Value of Agricultural Products Sold (\$1,000)	153,313	164,767	128,385
Crops, including nursery and greenhouse crops	140,722	153,285	116,084
Livestock, poultry, and their products	12,591	11,483	12,301
Average Market Value of Agricultural Products Sold per Farm (\$)	212,345	193,844	159,287

¹ Data are based on a sample of farms.

D: Withheld to avoid disclosing data for individual farms.

NA: Not available.

SOURCES: U.S. Bureau of the Census, *1987 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, AC87-A-11 (August 1989), chapter 2, table 1, p. 130; *1992 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, AC92-A-11 (1994), chapter 2, table 1, p. 148; U.S. Department of Agriculture, National Agricultural Statistics Service, *1997 Census of Agriculture, Geographic Area Series, Hawaii, State and County Data*, (1998), chapter 2, table 1, p. 150.

5.1.4

NUMBER OF FARMS, FARM ACREAGE, AND FARM EMPLOYMENT, MAUI COUNTY

	1994	1995	1996	1997	1998	1999
Number of Farms ¹	850 r	800 r	800 r	800	800	800
Farm Acreage (1,000) ²	320 r	295 r	290 r	290	290	290
Farm Employment ³						
Self-employed farm operators	250	300	300	300	350	450
Unpaid workers ⁴	100	100	150	100	150	200
Hired workers	2,000	1,850	1,850	1,850	1,950	2,200

¹ Based on farm definition of \$1,000 or more of agricultural sales.

² Includes land not in crops and pasture, such as farm house lots, roads, woodlots, etc.

³ Average of quarterly data.

⁴ Includes family members and others working 15 or more hours per week.

r: revised

5.1.5

VALUE OF CROP AND LIVESTOCK SALES, HAWAII AND MAUI COUNTY

In thousands of dollars

	All Crops and Livestock	All Crops	Sugar (unprocessed cane)	Pineapple (fresh equivalent)	Other Crops	Livestock
State Total						
1995	492,683r	421,089r	127,700	87,360	206,029r	71,594r
1996	494,565r	428,671r	108,100	95,914	224,657r	67,017r
1997	485,743	418,661	85,500	91,721	241,440	67,799
1998	493,442	420,734	87,400	92,776	240,558	72,708
1999	509,562	439,940	86,800	101,448	251,692	69,622
Maui County						
1995	124,657r	114,064r	59,400	24,775	29,889r	10,593r
1996	126,587r	116,444r	57,200	27,144	32,100r	10,680r
1997	127,608	121,002	53,900	28,295	38,807	9,813
1998	135,373	124,816	58,700	28,413	37,703	10,557
1999	130,416	124,526	60,200	28,325	36,001	5,890

r: revised

SOURCE: Hawaii Agricultural Statistics Service, (http://www.nass.usda.gov/hi/stats/t_of_c.htm).

5.1.6

ACREAGE IN CROP AND NUMBER OF CROP FARMS, MAUI COUNTY

	1995	1996	1997	1998	1999
Acres in Crop (1,000 acres)					
Sugarcane	42.6	42.3	43.1	42.9	43.3
Pineapples (land used for pineapple)	9.5	9.3	9.1	9.6	9.1
Vegetables and melons (harvested acreage) ¹	2.0	1.5	1.4	1.6	1.4
Fruits (excluding pineapples)	0.2	0.2	0.3	0.3	0.3
Coffee	D	D	D	D	D
Macadamia nuts	D	D	D	D	D
All other crops ²	2.2	1.4	1.2	1.9	1.9
Number of Crop Farms					
Sugar	2	2	2	2	2
Pineapples ³	3	6	4	5	5
Vegetables and melons	95	105	105	114	145
Fruits (excluding pineapples)	74	85	86	262	251
Coffee	D	D	D	D	D
Macadamia nuts	D	D	D	D	D
Taro	20	22	15	14	13
Flowers and nursery products	106	111	106	145	154

¹ Includes ginger root.

² Includes taro, seed corn, feed and forage crops (excluding pineapple feed products), and flowers, foliage and nursery products.

³ Includes specialty pineapple.

SOURCE: Hawaii Agricultural Statistics Service, (http://www.nass.usda.gov/hi/stats/t_of_c.htm)

D: Withheld to avoid disclosure of individual operations.

5.1.7

**LIVESTOCK: NUMBER OF OPERATIONS, VOLUME
OF MARKETINGS, AND VALUE OF SALES,
MAUI COUNTY**

	1995	1996	1997	1998	1999
Number of Livestock Operations, December 31					
Cattle ¹	190	190	180	180	170
Hogs	60	60	60	50	60
Milk	5	5	5	5	4
Eggs	7	7	7	8	8
Honey ²	2	5	5	D	D
Volume of Livestock Marketings					
Beef (dressed weight; 1,000 lb) ³	2,055	2,665	2,844		
Pork (dressed weight; 1,000 lb)	1,584	1,361	933		
Milk (million lb)	D	D	D		
Eggs (million)	D	D	D		
Honey (1,000 lb)	D	D	D		
Value of Livestock Sales (\$1,000)					
Cattle ⁴	3,621	3,425	3,003	3,641	2,865
Hogs ⁵	1,649	1,497	1,008	825	894
Milk	D	D	D	D	D
Eggs	D	D	D	D	D
Total livestock sales⁶	10,684	10,680	9,813	10,557	5,890

¹ Includes beef, dairy, and dairy replacement operations.

² Oahu combined with Maui, Molokai and Lanai to avoid disclosure of individual operations.

³ Includes slaughter cattle, but excludes calves shipped out-of-state.

⁴ Excludes interfarm sales; includes out-of-state sales of slaughter cattle and feeder calves.

⁵ Excludes interfarm sales; includes out-of-state sales of slaughter animals.

⁶ Sum of individual commodities may not add to total. Includes sheep, wool, turkeys, horses, honey, beeswax, broilers and chickens.
D: Withheld to avoid disclosure of individual operations.

Source: Hawai'i Agricultural Statistics Service. (http://www.nass.usda.gov/hi/stats/t_of_c.htm).

5.1.8

**VEGETABLES, MELONS AND TARO,
ACREAGE, PRODUCTION AND VALUE,
MAUI COUNTY**

Commodity	1994	1995	1996	1997	1998	1999
HARVESTED ACREAGE¹						
Beans, snap	25	30	37	45	95	90
Cabbage, head	390	370	315	300	280	210
Celery	20	20	20	20	20	25
Corn, sweet	30	45	50	25	40	55
Cucumbers	60	70	140	155	170	145
Lettuce	30	30	25	15	15	D
Onions, dry	170	205	200	180	235	190
Onions, green	15	15	15	10	15	D
Peppers, green	195	105	15	5	D	D
Romaine	100	110	85	90	110	95
Squash, Italian	60	45	35	40	50	70
Sweet potatoes	145	155	95	70	65	70
Tomatoes	130	190	215	245	155	D
Watermelon	645	360	60	5	10	D
Other Vegetables & Melons ²	536	263	258	250	280	450
Total Vegetables & Melons	2,551	2,013	1,565	1,455	1,540	1,400
Taro (acreage in crop) ³	75	85	85	85	95	90
PRODUCTION (1,000 pounds)						
Beans, snap	140	220	245	350	500	570
Cabbage, head	7,900	8,000	7,300	6,700	7,300	5,700
Celery	450	380	300	370	470	500
Corn, sweet	130	160	185	130	170	240
Cucumbers	930	900	2,500	2,600	2,900	2,300
Lettuce	300	240	200	100	55	D
Onions, dry	2,070	2,265	1,980	1,690	3,000	2,900
Onions, green	150	150	120	105	125	D
Peppers, green	2,475	1,300	160	60	D	D
Romaine	1,150	1,140	960	1,150	1,900	1,100
Squash, Italian	600	410	380	350	470	750
Sweet potatoes	1,500	1,500	1,100	800	750	600
Tomatoes	3,270	4,900	5,580	8,070	5,800	D
Watermelon	13,440	9,950	1,750	95	140	D
Other Vegetables & Melons ²	8,153	4,355	3,460	3,730	3,625	7,280
Total Vegetables & Melons	42,658	35,870	26,220	26,300	27,205	21,940
Taro (marketings) ³	980	1,240	1,100	900	1,100	1,400

5.1.8

CONTINUED

Commodity	1994	1995	1996	1997	1998	1999
	VALUE (\$1,000)					
Beans, snap	149	228	256	359	416	496
Cabbage, head	1,659	1,784	1,351	1,380	1,314	1,009
Celery	115	118	79	102	120	125
Corn, sweet	104	105	114	98	117	161
Cucumbers	372	342	988	832	1018	840
Lettuce	168	106	80	41	23	D
Onions, dry	2,215	2,587	2,344	1,658	2,367	2,062
Onions, green	152	171	132	111	121	D
Peppers, green	1,309	723	79	30	D	D
Romaine	411	473	341	414	646	352
Squash, Italian	288	209	181	179	235	334
Sweet potatoes	807	816	558	432	426	360
Tomatoes	1,645	2,239	2,751	4,064	2,917	D
Watermelon	2,043	1,602	277	18	29	D
Other Vegetables & Melons ²	2,919	1,694	1,308	1,351	1,334	2911
Total Vegetables & Melons	14,356	13,197	10,839	11,069	11,083	8,650
Taro ³	502	610	568	450	577	736

¹ For vegetables and melons, acreage harvested (e.g., one acre planted and harvested three times during the year equals three harvested acres). For lotus root, watercress and taro, average acreage in crop during the year.

² Only selected items are shown separately. All other vegetables and melons for the island are included in the other vegetables and melons category.

³ Oahu combined with Maui and Molokai to avoid disclosure of individual operations.

D Not reported to avoid disclosure of individual operations.

SOURCE: Source: Hawai'i Agricultural Statistics Service. (http://www.nass.usda.gov/hi/stats/t_of_c.htm)

5.1.9

FLORICULTURE AND NURSERY PRODUCTS, MAUI COUNTY

Number of farms and growing area

	Number of Farms	Greenhouse (1,000 sq ft)	Artificial Shade (1,000 sq ft)	Natural Shade (Acres)	Open Field (Acres)	Total (Acres)
State Total						
1994	660	3,770	21,600	18	1,690	2,290
1995	705	3,770r	24,215r	15	2,040	2,698
1996	690	2,820	23,405	10	1,600	2,212
1997	670	2,805	23,885	10	1,535	2,158
1998	745	2,810	24,200	9	2,050	2,679
1999	855	2,810	24,510	7	2,325	2,959
Maui/Molokai						
1994	102	310	505	0	480	499
1995	106	270	375	0	450	465
1996	111	230	335	0	415	428
1997	106	235	345	0	295	308
1998	145	280	475	0	435	452
1999	154	325	605	0	415	436

* Less than 1/2 acre.

r: Revised.

Source: Hawai'i Agricultural Statistics Service. (http://www.nass.usda.gov/hi/stats/t_of_c.htm)

5.1.10

FLORICULTURE AND NURSERY PRODUCTS, BY COMMODITY, MAUI COUNTY

Value of grower sales (\$1,000)

Commodity	1995	1996	1997	1998	1999
Cut Flowers ¹	2,188r	2,371	2,106	2,854	2,557
Orchids ²	470r	744	D	D	1,185
Lei Flowers	1,331	1,228	D	D	D
Foliage ³	D	D	D	D	D
Potted Flowering Plants	D	D	D	D	D
All Other Nursery Products ⁴	3,533	2,923	5,807	5,763	5,737
Unspecified Sales ⁵	274	249	311	334	138
Total	7,796r	7,515	8,320	8,951	9,617

¹ Cut orchids included in "Orchids" category.

² Excludes orchids used for lei flowers.

³ Includes potted, cut and unfinished.

⁴ Includes bedding plants, plant rentals, sod, trees, and any other nursery products not elsewhere classified.

⁵ Includes grower sales greater than \$999 but less than \$10,000 which were not categorized.

D: Data not shown separately to avoid disclosure of individual operations.

Source: Hawai'i Agricultural Statistics Service. (http://www.nass.usda.gov/hi/stats/t_of_c.htm)

5.1.11

VALUE OF CROP SALES AND VOLUME OF CROP MARKETINGS, MAUI COUNTY

	1995	1996	1997	1998	1999
Value of Crop Sales (\$1,000)					
Sugar (unprocessed cane)	59,400	57,200	53,900	58,700	60,200
Pineapples (fresh equivalent)	24,775	27,144	28,295	28,413	28,325
Vegetables, ginger root, herbs & melons	13,760	11,652	11,692	11,755	9,519
Fruits (excluding pineapples)	1,031	858	1,136	1,051	1,056
Coffee (parchment)	D	D	D	D	D
Macadamia nuts, in shell	D	D	D	D	D
Taro	D	D	D	D	D
Seed and forage crops	D	D	D	D	D
Flowers and nursery products ¹	7,796	7,515	8,219	8,951	9,617
Total Crops ²	114,064	116,444	121,002	124,816	124,526
Volume of Crop Marketings					
Sugar, unprocessed cane (1,000 tons)	1,678	1,702	1,784	1,783	1,975
Pineapples, fresh equivalent (1,000 tons)	188	195	188	D	D
Vegetables and melons (1,000 lb)	36,110	26,570	26,590	23,625	14,715
Bananas (1,000 lb)	820	890	700	800	890
Papayas (1,000 lb)	755	480	915	1,300	920
Coffee, parchment (1,000 lb)	D	D	D		
Macadamia nuts, in shell (1,000 lb)	D	D	D	D	D
Taro (1,000 lb)	D	D	D	D	D

¹ Flowers, foliage, and nursery products.

² Total crop values shown are actual. Sum of individual commodities may not add to total. Forage crops' and Forest product's value combined and included in total crop value.

D: Withheld to avoid disclosure of individual operations.

* Coffee less than 5,000 pounds.

Source: Hawai'i Agricultural Statistics Service. (http://www.nass.usda.gov/hi/stats/t_of_c.htm)

Need to footnote volume of vegetables etc. 1998 and 1999. Lower figures reflect trend to report data on a statewide basis only.

SOURCE: Hawaii Agricultural Statistics Service, *Statistics of Hawaii Agriculture* (1997), pp. 7, 8, 10 and 12.

5.2.1

COMMERCIAL FISH LANDINGS, MAUI COUNTY

Year ended June 30

Year	Pounds Landed	Pounds Sold	Value (\$)
1982	792,504	734,258	873,251
1983	944,045	899,995	1,109,356
1984	889,715	810,257	1,083,651
1985	862,333	810,599	1,140,578
1986	1,007,255	915,637	1,659,720
1987	1,120,497	1,026,307	1,919,196
1988	961,337	851,858	1,780,096
1989	698,000	596,620	1,363,703
1990	777,385	624,466	1,428,937
1991	744,805	602,325	1,390,838
1992	854,282	692,870	1,596,576
1993	516,909	409,498	1,050,460
1994	624,147	486,682	1,226,805
1995	731,447	586,398	1,597,826
1996	783,394	620,343	1,577,195
1997	663,203	507,255	1,409,797
1998p	793,378	638,085	1,627,632
1999	725,445	555,477	1,562,511
2000	643,581	501,263	1,502,897

SOURCE: State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Marine Landings, State of Hawaii*, fiscal year reports.

5.2.2

SEA SPECIES COMMONLY CAUGHT NEAR FISH AGGREGATING DEVICES, MAUI COUNTY

Pounds landed in year ending June 30

Species	1997	1998	1999	2000
Aku	14,651	19,809	42,012	18,538
Bigeye	77	1,234	1,449	554
Yellowfin	18,256	33,108	41,447	18,508
Kawakawa	87	124	150	105
Tuna (misc.)	—	1,149	598	1,140
Blue Marlin	16,084	28,230	15,677	20,785
Striped Marlin	4,495	1,393	3,707	2,409
Sailfish	27	59	-	118
Shortbill Spearfish	693	567	2,947	1,345
Kahala	—	-	-	12
Kamanu	11	44	21	13
Keokeo	—	-	-	1
Mahimahi	44,824	32,634	44,480	37,528
Mako	—	-	410	-
Mano	1,095	824	255	100
Ono	9,458	8,403	7,785	7,143
Opelu	137	-	83	-
Uku	—	-	15	-
Other	19	1,058	119	169
Total	109,937	128,636	161,155	108,468
Devices Available	19	15	16	15

Note: Data incomplete due to late submission of fish catches.

NOTE: Fish aggregating devices are non-navigational buoys placed several miles offshore to attract fish. Data is incomplete due to late submission and processing of fish catch records.

SOURCE: State of Hawaii, Department of Land and Natural Resources, Division of Aquatic Resources, *Commercial Marine Landings, State of Hawaii*, fiscal year reports.

5.3.1

AGRICULTURAL LANDHOLDINGS OF FOREIGN OWNERS, MAUI COUNTY

Parcels	
Acres	60,300
Reported Value (\$1,000) ¹	165,293
Use (acres)	
Crop Land	2,708
Pasture	47,668
Forest	1,140
Other Agriculture	8,184
Other Non-agriculture	600
Total	60,300

¹ Reported value is purchase price or non-purchase price (estimated value) at time of acquisition.

SOURCE: Hawaiian Agricultural Statistics Service, *Statistics of Hawaiian Agriculture*, (1995, annual), from "Foreign ownership of U.S. agricultural land through December 31, 1995," Economic Research Service, USDA, *ERS Statistical Bulletin No. 931*.