LAND VALUES MARKET STUDY:

1) LAND VOLUES OF THE DEDEDO AREA

2) LAND VALUES OVER THE ISLAND AS A WHOLE

By: David Kirkland

Pete Blas

November 24, 1971

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LAND VALUES MARKET STUDY

Enclosed herewith are two studies, by David Kirkland and Pete Blas, the first focusing exclusively on the Dededo area, the second looking at land values over the island of Guam as a whole.

Certain references and techniques are common to both studies and are listed below.

- 1) All indicated property values are computed from figures given in recorded documents at the Department of Land Management, Government of Guam.
- 2) Rates of appreciation are in every case calculated using compound interest tables with monthly compounding, which is then converted to a yearly rate.
- 3) References are made to zoning classifications, which are:

A Agricultural

R-1 Single family residential
R-2 Multi-family residential

C Commercial Industrial

Also enclosed are two sets of background data which give the assigned number of the recorded document from which information is taken, the municipality and lot identification number, the price computed in dollars per square meter, and the date the transaction was recorded; the first set is arranged chronologically for the island as a whole, the second chronologically by community.

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METHODOLOGY: A circle with radius of 2-1/2 miles originating in Tract 100, Dededo, was drawn as shown on the accompanying map, exhibit B. Within the enclosed area, land transactions in the period January 1969 to October 1971 were examined to decide if they met the following requirements:

- 1) R-1 and A zoning only
- 2) Transaction involving more than 500 square meter area
- level coral terrain
- 4) access available
- 5) water within 1/8 mile
- 6) sales with government as grantor excluded
- 7) sales between relative excluded
- 8) raw, undeveloped land transactions only

The purpose of the requirements was to ensure comparability to Tract 100 land while attempting to show changes in market value of such land over the time interval covered. The data used is shown in Table B.

The data is plotted on the enclosed graph, exhibit A. The median sales price in dollars per square meter for each running six month period commencing with July-December, 1969, has been computed, plotted in red on the graph, and connected by the red line on the graph. The median value is that value in each six month period for which there were an equal number of transactions both higher and lower in price (for those periods with an odd number of transactions), or the average of those two values for which there were an equal number of transactions both higher and lower in price (for those periods with an even number of transactions). Both mean (i.e., the numerical average) and median values for each period are shown in Table A following. As mean and median values are very close to each other numerically, either one could be chosen as representative of land value patterns; the median was arbritarily selected.

ANALYSIS:

	2nd half 1969	lst half 1970	2nd half 1970	lst half 1971	2nd half 1971
MEAN	\$1.19	\$1.55	\$1.56	\$2.42	s3.07
MEDIAN	\$1.11	\$1.65	\$1.56	\$2.32	\$3.02
RANGE	\$.62-\$1.85	\$1.24-2.01	\$.74-2.49	\$1.11-5.10	\$2.00-4.92

The median value over the 24 month period September 69 to September 71 rises from \$1.11 to \$3.02. Using compound interest tables this computes to an annual rate of appreciation of 51%. Alternatively, calculating appreciation on a yearly basis using the median values of the second half of 1969 (\$1.11), 1970 (\$1.56) and 1971 (\$3.02) as inputs, appreciation in the 1969-1970 interval is approximately 34.5%, while in the 1970-1971 interval appreciation stands at approximately 68%.

CONCLUSION

Fair market value of land meeting the 8 criterions listed above in methodoly, and also within 2 1/2 miles from Tract 100, during the period July-October 1971 is \$3.02 per square meter.

TABLE B

1969

Document No.	Municipality	\$ per square meter	Date
90885	Barrigada, Tract 148	\$1.85	7/69
92314	Dededo Tract 172	\$1.11	11/69
92467	Barrigada, portion of lot 5357	\$0.62	11/69
	1970		
93170	Dededo, Tract 100C	\$1.24	1/70
93630	Barrigada, Tract 148	\$1.47	2/70
94788	Dededo, Tract 172	\$1.65	5/70
94803	Dededo, Tract 172	\$1.65	5/70
94826	Dededo, Tract 172	\$1.61	5/70
94857	Dededo, Tract 172	\$1.65	· 5/70
94865	Dededo, Tract 172	\$1.65	5/70
94843	Dededo, 5324B	\$2.01	5/70
94896	Dededo, 5324A	\$1.68	5/70
95583	Barrigada, Tract 148	\$1.47	6/70
95853	Dededo, 10059A	\$2.00	7/70
96125	Dededo, Tract 246	\$0.74	7/70
96126	Dededo, Tract 246	\$0.74	7/70
96135	. Dededo, Tract 172	\$1.56	7/70
96136	Dededo, Tract 172	\$1.56	7/70
96185	Dededo, Tract 172	\$1.61	8/70
98623	Dededo, Tract 172	\$2.49	12/70

99171	Barrigada, Tract 148	\$2.50	1/71
99204	Dededo, Lot 5242-2-1-3	\$1.25	1/71
99597	Dededo, 5324A&B, 10059A	\$2.75	2/71
100248	Dededo, Tract 246	\$1.11	3/71
100429	Barrigada, Tract 219	\$2.14	3/71
100658	Barrigada, Tract 219	\$1.60	3/71
100863	Dededo, Tract 172	\$2.93	4/71
101812	Barrigada, Tract 219	\$5.10	5/71
105034	Barrigada, Tract 262	\$3.02	8/71
105203	Barrigada, Tract 262	\$3.02	8/71
105204	Barrigada, Tract 262	\$3.02	8/71
105205	Barrigada, Tract 262	\$3.02	8/71
105206	Barrigada, Tract 262	\$3.02	8/71
105207	Barrigada, Tract 262	\$3.02	8/71
105426	Barrigada, Tract 262	\$3.02	9/71
105427	Barrigada, Tract 262	\$3.02	9/71
105428	Barrigada, Tract 262	\$3.02	9/71
105835	Dededo, Tract 100C	\$3.95	9/71
106159	Barrigada, Tract 262	\$2.96	10/71
106162	Barrigada, Tract 262	\$2.00	10/71
106331	Barrigada, Tract 262	\$3.02	10/71
106607	Barrigada, Tract 262	\$2.00	10/71
106621	Dededo, Tract 100C	\$4.92	10/71

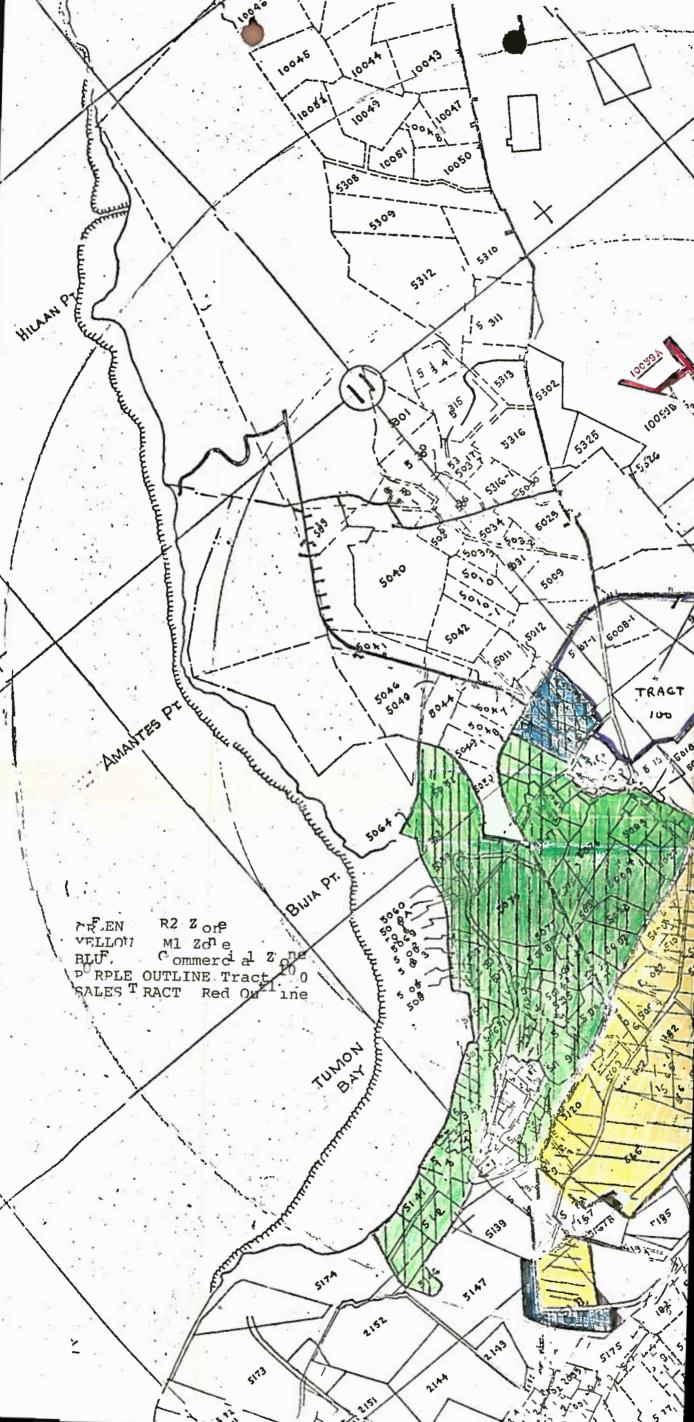
EXHIBIT A

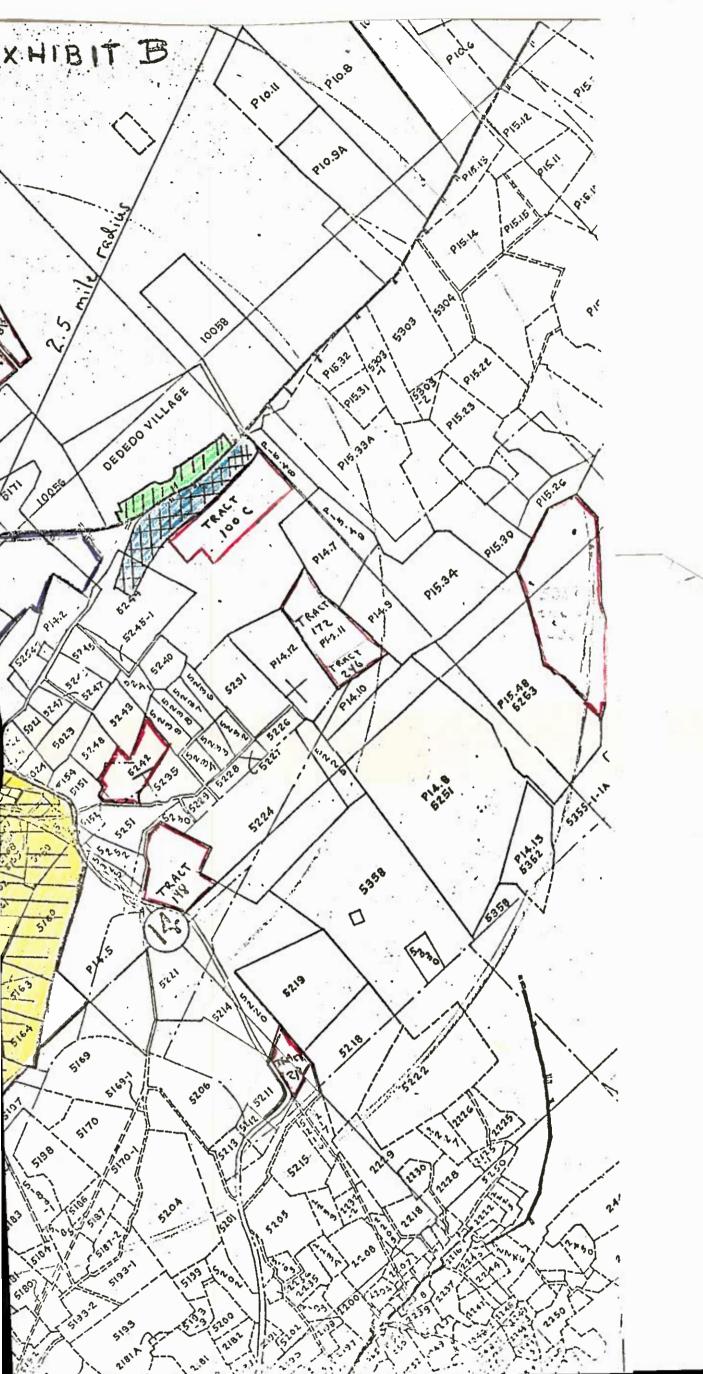
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GUAM LAND STUDY

METHODOLOGY:

Land transactions over the period January, 1969 through October, 1971 over the entire Island of Guam were recorded chronologically giving prices in dollars per square meter. Transactions for land in Agana, land with beach frontage, and land zoned R-2, M, or C, were then excluded, with the intent of leaving only land zoned R1 or A which could be compared to Tract 100.

ANALYSIS:

Means and medians for each running six month period beginning January, 1969 to June, 1969 were computed and are shown below in Table A.

TA	В	\mathbf{L}	${f E}$	Α

	lst half 1969	2nd half 1969	lst half 1970	2nd half 1970	lst half 1971	2nd half
MEAN	\$1.59	\$1.44	\$1.81	\$1.80	\$2.44	\$2.34
MEDIAN	\$1.27	\$1.10	\$1.75	\$1.90	\$2.27	\$2.28

To calculate appreciation, the values were taken for the first half of 1969 and the second half of 1971 (placing the values in the center of each respective period yields a time period of 30 months) and financial tables were used to determine average annual rate of appreciation. Using the mean values which would be \$1.59 to \$2.34, the average annual rate of appreciation is 15.5%, based on monthly compounding. Using median values which are \$1.27 to \$2.28 in the same manner the average annual rate of appreciation is 23.6%.

Alternatively, looking at average values for each year using the same techniques yields these results:

yields these results.	1969	1970	1971
Six Month Means	\$1.59 \$1.44	\$1.81 \$1.80	\$2.44 \$2.34
Average mean for year	\$1. 515	\$1.805	\$2.39
Annual rate of appreciation	17.6%	28.	5%

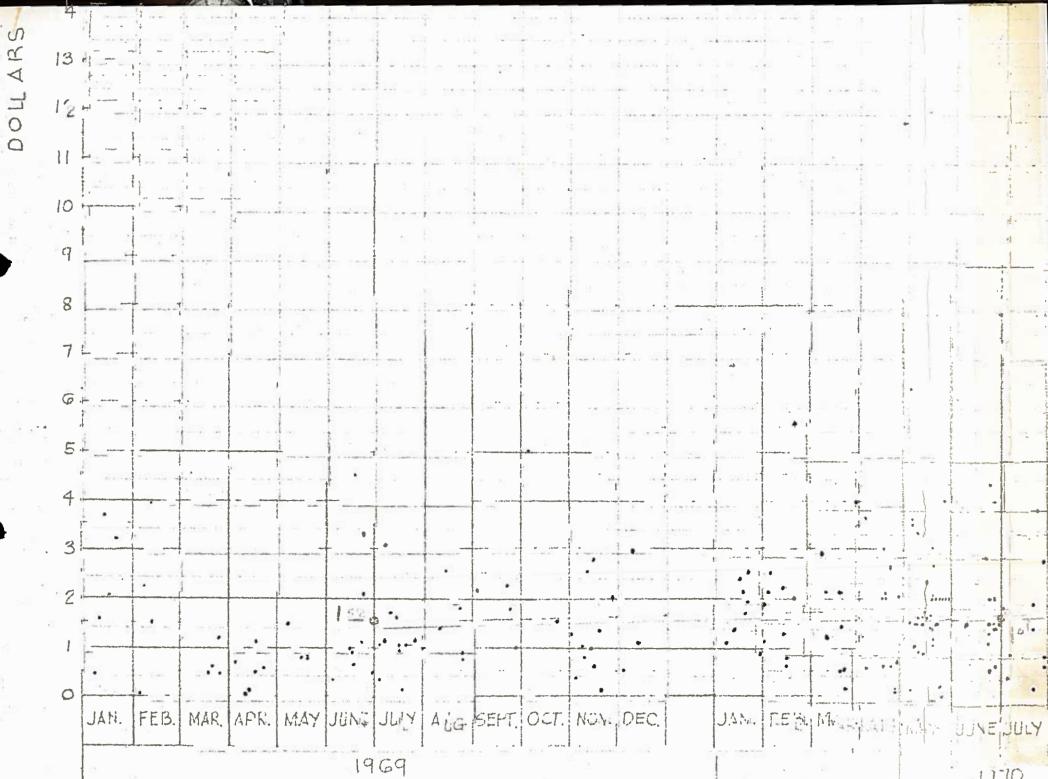
BUREAU OF PLANNING GOVERNMENT OF GUAM P.O. BOX 2950 AGANA, GUAM 96910

	1969	1970	1971
Six month medians	\$1.27 \$1.10	\$1.75 \$1.90	\$2.27 \$2.28
Average median for year	\$1.185	\$1, 825	\$2.275
Annual rate of appreciation	44	% 2	2.1%

Since the rates of appreciation calculated from the mean and median values are in substantial conflict as shown above, one of the two cannot represent land value patterns in Guam. The rates of appreciation calculated from the mean values are lower and better represents land value patterns in Guam based on examination of the sales data plotted on the attached graph, whereas the rates of appreciation calculated from the median values appear to be in conflict with the sales data as shown in said graph, viz., the rate of appreciation for 1969 to 1970 of 44% would be double the rate of appreciation for 1970 to 1971 of 22.1%.

CONCLUSION:

Using mean values, the average annual rate of appreciation over the 30 month period March 1969 to September 1971 in land values for Guam land zoned R-1 and A, and excluding Agana and land with beach frontage, is 15.5%, or alternatively, 17.6% in the period 1969 to 1970 and 22.1% in the period 1970 to 1971. The fair market value of such land in the second half of 1971 would thus be \$2.34 per square meter.



PRICE IN DOLLARS PER SQUARE METER FOR LANT IN GUAM ZONED A and R-1, suche ing Agana and beach property.

MEAN UALUES FOR 1969, 1970, 1971 shown in green

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DATE October 30, 1971

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Paul Souder

copies to K. Tim Yee

Fred Wood

AT Guam Division

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SUBJECT Land Value on Guam

There is enclosed a Guam land value study by David Kirkland with backup data showing an average appreciation in land value on Guam over the last three years of 32% annum.

Guam Land Value Study By David Kirkland

Graph A plots the average price in dollars per square meter of raw land on the vertical axis against time in monthly increments for all of 1969 and for January through September of 1971 on the horizontal axis.

Graph B plots the average price in dollars per square meter of raw land on the vertical axis against time on the horizontal axis, separating Dededo, Barrigada, and Sinijana from the remainder of the island. The final value of \$2.42 in the June, 1971 to September, 1971 period for Sinijana was surprisingly low; as the sample for this value involved only six transactions, it may be inaccurate.

General Comments

September 1971, was the terminal date for this data. Complete October data is not yet available, but will be obtained and this study continued with projected updating every quarter, beginning in January 1972, when data for the final quarter of 1971 is complete.

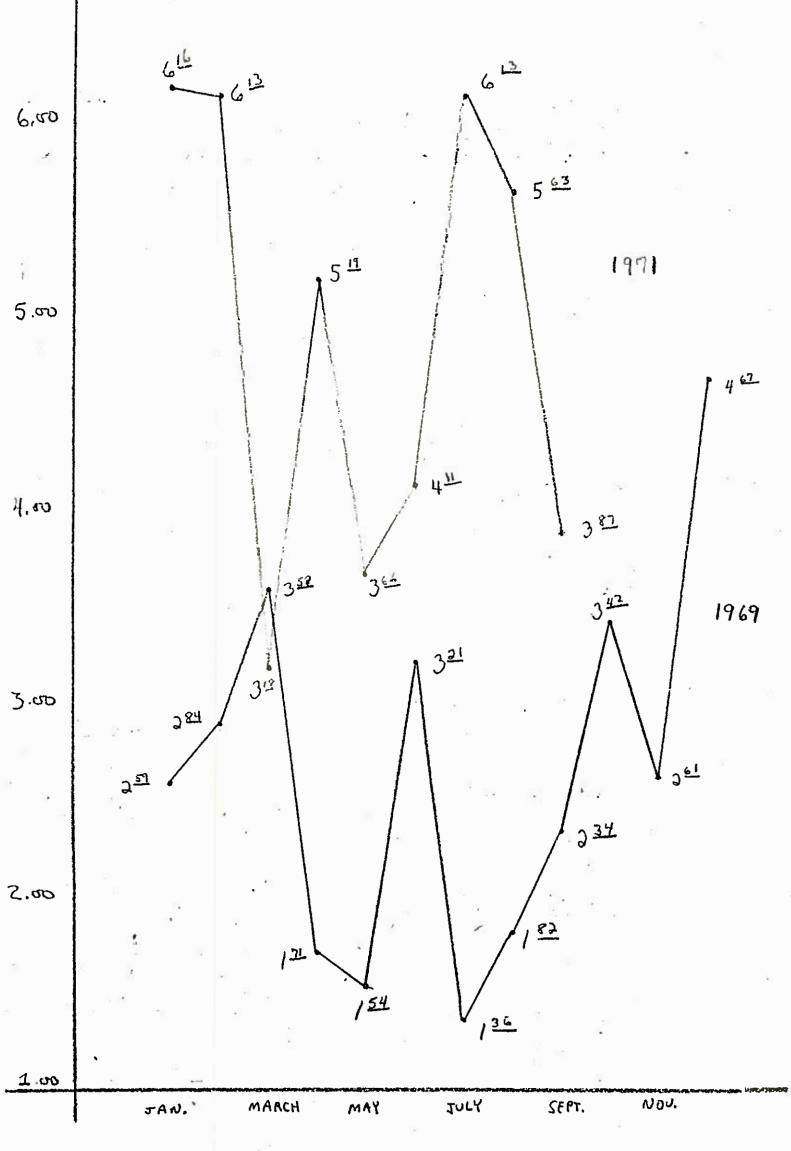
Agana has been excluded from this study. There were an insufficient number of transactions to allow its separate treatment, while land values (\$25.00 to \$70.00 per square meter) were sufficiently great that their inclusion would have skewed the basic data.

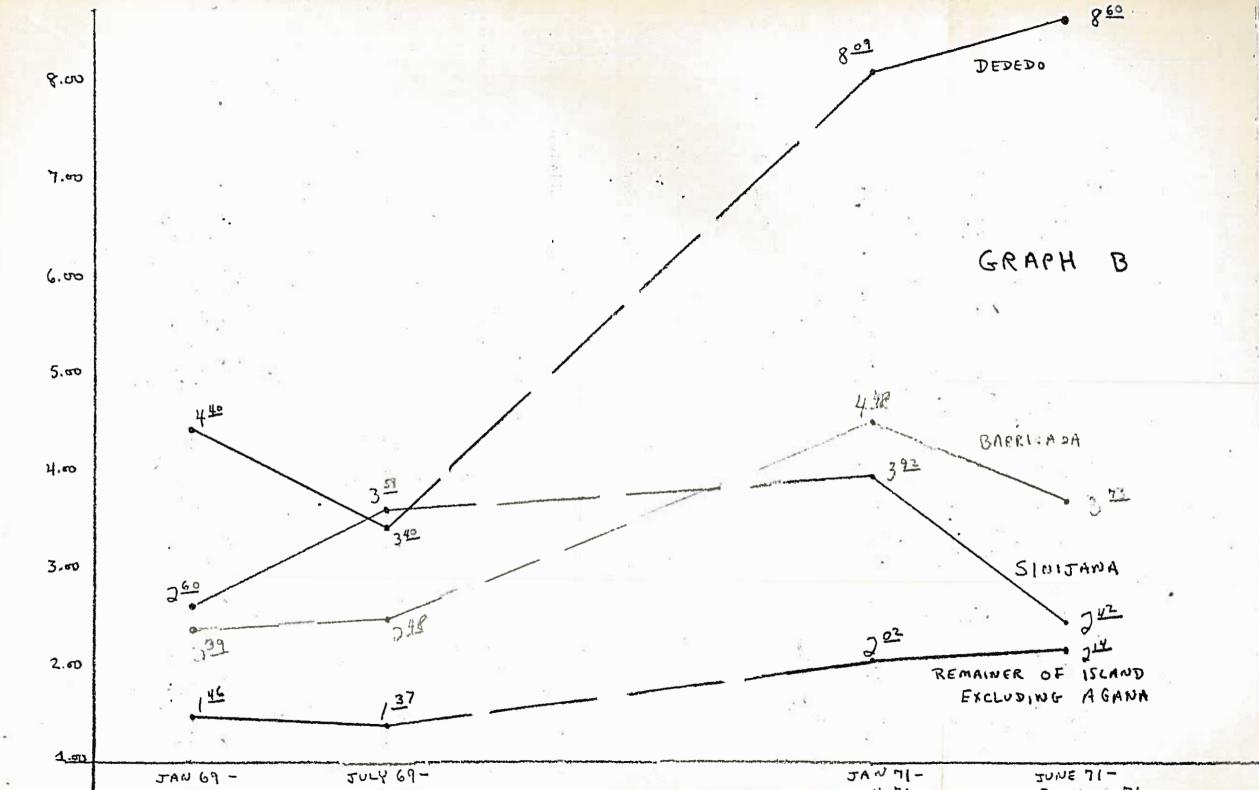
To attempt to obtain an estimate of percentage increase in average raw land value, the average cost per square meter of raw land in 1969 was computed and compared to the same observation for January through September 1971. This was \$2.62 as compared to \$4.78. Assuming a 23 month interval between the middle of the two periods, the annual rate of appreciation in land value averages 32% per annum.

Methodology:

Data for this study was obtained by reviewing deeds, options to purchase, contracts to sell, and land appraisals in both probate cases and agreements to exchange. All data was from the Department of Land Management, Government of Guam, and in each case the instrument number is noted in the background data next to the price which is given in dollars per square meter.

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