

Diet, health and the nutrition transition: some impacts of economic and socio-economic factors on food consumption patterns in the kingdom of Tonga

Abstract: An essential element of the "health transition" is the emergence of disease patterns associated with changes in dietary regimes. The consumption of nutritionally poor (imported) foods in the Pacific is associated with increasing rates of diet related non-communicable diseases (NCDs). An oft-made assumption is that changes in consumption patterns are related to food preference (specifically preferences for high fat and/or dense carbohydrate foods). Recent work in the Kingdom of Tonga suggests that the "common-sense" association between food preference and food consumption is incorrect. The results of a large survey (n=430) indicate availability is the key factor in consumption, and that food preference, knowledge of the nutritional values of foods, and frequency of consumption are not correlated. Further analysis shows there are significant differences in consumption patterns between persons of higher and lower socio-economic status; perception of availability and frequency of consumption are a function of economic and social position – specifically access to cash. These results underline the salience of economic factors; the rise in NCDs is correlated with the increasing importance of the cash economy (not cultural values or ignorance of nutritional issues). In the absence of economic solutions, current consumption patterns will continue. **Keywords:** Eating; Food preferences; Nutritive value; Food/supply and distribution; Diet/economics; Diet surveys; Tonga

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Introduction

Oceanic populations, like those of the rest of the developing world, are profoundly affected by the interplay of economic and political processes we gloss as "development" and "globalization". One key and seemingly widespread result of contemporary global process in Oceania is the so-called health transition. This paper takes up one part of this transition, the nutrition transition, with an eye to analyzing the economic and cultural

Development and globalization have often resulted in disrupted food supplies, new patterns of food consumption, and in a great many contexts, a decrease in the quality (though often not the quantity) of foods.

processes that impact the nutrition transition in the Kingdom of Tonga. As a central aspect of the health transition, the changes in food supply and consumption patterns inherent in the nutrition transition are worthy of consideration. There is increasing concern among health practitioners and policy makers about the importation of inexpensive but unhealthy foods and the associated dietary changes¹⁻⁵. The reasons for these consumption patterns are usually assumed to be either cultural (a product of high prestige being associated with the consumption of imported foods) or natural (a product of physiologically generated preferences for certain tastes), or some combination of both. While the importation of all types of foodstuffs has an impact on Tonga's balance of trade and food security generally, the consumption levels

of low quality, high fat meats is of particular importance^{6,7}. In the Kingdom of Tonga frozen mutton flaps and chicken parts (i.e. the high fat parts which are less marketable in other nations) make up a large portion of these food imports. Mutton flaps (sometimes also called lamb flaps), which are

cut from the short-ribs and belly of a yearling lamb, contain very little meat, and a great deal of fat. The negative health consequences arising from sustained consumption of these foods in terms of obesity and associated illnesses, such as diabetes and diseases of the cardiovascular system, are well established⁸. This is a dark side of the health transition, as the same general processes associated with increased availability of medical care and decreasing levels of communicable disease are associated with increases in non-communicable diseases (NCDs). Development and globalization have often resulted in disrupted food supplies, new patterns of food consumption, and in a great many contexts, a decrease

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Table 1. Import levels of mutton flaps to the Kingdom of Tonga

Year	Quantity - kg	Value (CIF) - T\$
1976	1 434 696	\$420,217.00
1979	2 208 627	\$1,132,626.00
1982	1 571 781	\$1,321,991.00
1985	2 511 861	\$2,912,221.00
1988	2 237 927	\$2,655,050.00
1991	2 584 637	\$2,547,629.00
1994	3 542 984	\$3,102,120.00
1996	2 940 822	\$4,480,702.00

Source: ref. 6

in the quality (though often not the quantity) of foods. The nutrition transition is, like the health transition, not without ambiguity when considering changes in the well-being of contemporary populations.

This is the second paper reporting the results of a large questionnaire style survey (n=430) conducted with Tongans between the ages of 12 and 82 in June and July of 2000 in the Kingdom of Tonga. The survey explored elements of the Tongan food system (which includes both imported and indigenously produced food) by asking respondents to rate foods along each of four axes: food preference, frequency of consumption, perception of nutritional value, and perception of availability. An earlier paper reported analyses based on reports of frequency of consumption and the patterns of food preferences⁹ across the sample. The analysis presented here develops this earlier paper by focusing more specifically on the patterns of perceived availability that emerge from the survey – in particular we examine the impact of socio-economic status (SES) on perceptions of availability, and then follow through with a more detailed examination of the ramifications of the availability of foods on consumption patterns.

The general notion that the educated elite (i.e. people with high SES) of a modernizing population are more engaged with, and compliant to, western medical regimes may be valid for curative action¹⁰ but our data show quite clearly that dietary patterns associated with NCDs are more prevalent among the better educated populations we surveyed. In an interesting inversion of some expectations, it is the more highly educated (as measured by a proxy variable of occupation) who are more likely to consume nutritionally problematic imported foods. These patterns of consumption do not, however, emerge from a lack of knowledge. Quite the contrary, Tongans generally understand which foods can have detrimental effects. Nonetheless, consumption of health-compromising imported foods continues. In fact, importation levels of high fat imported foods have exploded in recent years.

The economic context

The Kingdom of Tonga shares with many other of the South Pacific micro-states a very particular economic structure. The so-called MIRAB type economy¹¹ fits contemporary Tonga very well^{12,13,14}. For the purposes of this paper, the impact of Migration, Remittances, Aid and Bureaucracy are threefold,

- 1) increased levels of urbanization for the purposes of education and employment;
- 2) increased access to sources of cash through participation in wage labor;
- 3) increased access to sources of cash through the receipt of remittances.

These changes have myriad ramifications, but for the purposes of this paper, the most important is the disruption of traditional land/human ratios because of the use of the migration option (both internal and external) to meet social goals. This has in turn resulted in:

- 1) overpopulation in the urbanizing areas – specifically the main island of Tongatapu (but areas in Vava'u as well);
- 2) increasing difficulty in accessing land/ marine resource bases, and thus access to traditional foods;
- 3) increasing reliance on purchased foods;
- 4) the incapacity to intensify agriculture in rural areas because of under population – specifically the outer island regions of Ha'apai and parts of Vava'u.

The reasons for these economic changes are complex, and generally beyond the scope of this paper¹². Nonetheless, one result of recent economic changes specifically pertinent to the nutrition transition can be seen in the Tables 1 and 2. The Tables show very dramatically the remarkable rate of increase in consumption of several high fat, low quality foods.

As Table 1 shows, mutton flap consumption has doubled from 1976 to 1996. Though mutton flap consumption dipped after 1994, increases in the levels of chicken part importation more than matched the drop; overall per capita consumption of high fat imported meats (reported

Table 2. Import levels and costs of selected foods (Kingdom of Tonga)

Food	Quantity in Kilos 1989	Cost in TOP 1989	Quantity in Kilos 1999	Cost in TOP 1999
Mutton Flaps	2 036 700	\$2,269,358.00	1 837 455	\$3,204,160.00
Poultry Pieces	789 310	\$1,121,585.00	2 568 650	\$3,500,719.00
Sausages	59 180	\$117,539.00	504 631	\$825,600.00
Corned Beef	502 049	\$1,820,893.00	646 683	\$2,703,278.00
Total	3 389 228	\$5,331,364.00	5 559 418	\$10,235,756.00

Source: ref. 15-19

Mutton Flaps - SITC code 011.21; Poultry Pieces: SITC code 011.41; Sausages: SITC code 013.40 & 013.41 combined; Tinned Beef: SITC code 013.9.

in Table 2) has increased from approximately 35 kilos per person, to 56 kilos per person from 1989 to 1999, an increase of over 60%. These changes were facilitated by access to cash, both from wages and from remittances, but also necessitated by shifts in population from rural to urban areas (or outer to main islands), limiting many people's ability to produce their own food¹³. Gross figures on importation levels such as those above are important, but finer analysis can draw out important nuances, including answers to some fundamental questions regarding the shape and character of the nutrition transition, such as: who is consuming elevated levels of imported foods, how, and why are they doing it?

The survey^{E1}

Four hundred thirty Tongans were asked to participate in the study. Five participants refused to participate (a refusal rate of just over 1%). There were 178 males and 241 females (6 respondents failed to report their sex) from both the main islands ($n = 385$) and the outer islands^{E2} ($n = 40$) who ranged in age from 12 to 82 years old ($M = 36.61$, $SD = 15.62$). The survey was administered at the meetings of church choirs. Because of the importance and wide appeal of church and church choirs in Tonga, choirs have a broad range of participants in terms of gender and age. Sites were selected to ensure that a variety of church denominations and geographical locations were represented in the sample. Although not random, the sample can be taken as broad and reasonably representative because the vast majority of Tongans regularly attend church, and singing in the choir is a popular activity for people of all age ranges.

All participants were recruited from choir groups and were unpaid volunteers (although small cash donations were provided to the choir groups through which the participants were recruited). Respondents were asked to evaluate a number of imported and indigenous foods (see Table 3). All evaluations were completed on 5-point Likert scales. Respondents were asked to rate their preference for each food on a scale anchored at 1 (very tasty), 2 (tasty), 3 (ok tasting), 4 (not tasty), and 5 (very poor tasting). Perceptions of nutritional value were evaluated

on a scale anchored at 1 (very good for your body), 2 (good for your body), 3 (ok for your body), 4 (not good for your body), and 5 (very bad for your body). Frequency of consumption was measured on a scale anchored at 1 (everyday), 2 (two or three times a week), 3 (once a week), 4 (occasionally), and 5 (very rarely). A subset of participants ($n=254$), all from the main islands, also evaluated food availability, because many of the foods listed above are seasonal. Respondents were asked to rate the availability of these foods when they are in season on a scale anchored at 1 (very easy to get), 2 (easy to get), 3 (can get sometimes), 4 (hard to get), and 5 (very hard to get).

Results

The results of the survey are reported in Table 3. In each of the four columns the results of the survey are reported with the number of respondents (n), the mean of their responses (M) and the standard deviation ($S.D.$) presented in order ($n/M/s.d.$) for each food and axes of the survey.

There are a variety of ways that this data can be analysed. In this paper we focus on the role of availability in contemporary consumption patterns. Unfortunately, availability data was collected only on the Island of Tongatapu. In the outer islands some sorts of imports (notably anything which must be frozen) are often available only sporadically. In addition, on many of the outer islands, traditional indigenous foods (including fish and chicken) are considerably more accessible. It was not possible to quantify the effects of these general conditions however. It was possible to conduct a factor analysis on the data that was available, which is the data on perceptions of food availability on the main island of Tongatapu.

Accordingly, a principal axis factor analysis with an oblique rotation was conducted on the perceived availability of the items. A scree test indicated a 4-factor solution. The factor analysis is a statistical technique used to identify commonalities between multiple items (in this case foods); each factor is a series of foods that vary across the sample consistently, and thus share a common underlying element. The factors are named for the com-

Table 3. General survey results

Type of Food <i>Tongan/English/Botanical</i> Names	Reported Preference n/m/s.d.	Reported Nutritional Value n/m/s.d.	Reported Frequency of Consumption n/m/s.d.	Reported Availability n/m/s.d.
<i>Pulu</i> / beef	418/1.51/0.74	414/1.56/0.80	407/3.95/1.04	291/3.09/1.03
<i>Kapisi</i> / cabbage (<i>Brassica oleracea</i>)	414/1.90/0.92	405/1.82/0.82	410/4.03/1.02	290/2.55/0.97
<i>Moa palangi</i> / imported chicken (parts)	416/2.59/1.03	398/2.74/0.88	412/2.92/1.39	289/2.31/1.11
<i>Lu</i> / taro greens	419/1.36/0.68	413/1.21/0.52	409/2.31/1.04	292/1.34/0.65
<i>Kuli</i> / dog	324/2.56/1.31	332/2.53/1.01	270/4.57/0.84	288/3.24/1.28
<i>Sosisi</i> / sausage or wieners	420/2.14/0.92	402/2.40/0.90	407/4.11/1.00	290/2.45/0.96
<i>Fingota</i> / shellfish	417/1.43/0.79	409/1.31/0.58	402/3.62/1.20	292/2.55/1.11
<i>Moa tonga</i> / domestic chicken (whole)	420/1.16/0.49	406/1.20/0.53	414/3.85/1.12	290/2.00/1.07
<i>Puaka</i> / pork	417/1.53/0.77	408/1.78/0.88	405/4.03/0.99	292/2.39/1.02
<i>La'i pele</i> / hibiscus leaves (<i>Hibiscus manihot</i>)	418/1.39/0.68	413/1.23/0.49	412/2.46/1.29	290/1.31/0.62
<i>Fo'i moa</i> / eggs	418/1.66/0.79	408/1.79/0.87	411/3.81/1.16	291/2.48/0.99
<i>Ika</i> / Fish	421/1.31/0.72	411/1.17/0.48	410/2.61/1.18	289/1.87/0.93
<i>Pulu masima</i> / salt beef	410/1.52/0.81	406/1.68/0.85	407/4.08/1.07	291/2.87/1.06
<i>Mui'i pipi</i> / turkey tails	406/2.87/1.06	392/2.99/0.88	383/4.43/0.80	289/2.92/1.03
<i>Tofua'a</i> / whale	287/2.39/1.26	305/2.02/0.93		289/4.48/0.82
<i>Sipi</i> / mutton flaps (the fatty underbelly and short ribs of a late lamb)	410/2.23/0.99	402/2.64/0.93	407/2.33/1.28	292/1.89/1.04
<i>Hoosi</i> / Horse	399/1.90/0.95	394/1.93/0.89	383/4.57/0.87	292/3.59/1.02
<i>Kapa ika</i> / tinned fish	415/2.84/0.96	396/3.03/0.82	405/3.46/1.27	292/2.05/0.99
<i>Kosi</i> / goat	345/2.68/1.14	354/2.31/0.93	299/4.66/0.66	289/3.99/0.94
<i>Kapa pulu</i> / tinned beef	414/2.12/0.96	404/2.44/0.98	408/3.56/1.15	291/2.61/1.13
<i>Feke</i> / octopus	404/1.58/0.89	404/1.54/0.77	391/3.80/1.15	292/2.66/1.08
<i>Koane</i> / corn (<i>Zea mays</i>)	417/1.53/0.75	410/2.12/0.85	412/4.13/1.04	291/2.55/0.99
<i>Nutolo</i> / flour noodles	412/2.62/1.09	405/3.24/0.91	407/3.49/1.36	291/2.16/1.01
<i>Siaine</i> / banana (<i>Musa sapientum</i>)	410/1.63/0.81	410/1.80/0.79	411/3.57/1.33	291/2.25/0.92
<i>Kape</i> / giant taro (<i>Alocasia macrorrhiza</i>),	406/2.23/1.12	400/1.78/0.87	401/4.05/1.08	292/2.76/1.11
<i>Ma pakapaku</i> / cabin biscuits (a type of flour cracker)	419/2.43/0.92	401/3.13/0.87	413/3.34/1.23	291/2.12/1.00
<i>Manioke</i> / Cassava (<i>Manihot esculenta</i>)	421/2.03/0.91	415/1.93/0.88	415/1.96/1.29	291/1.43/0.72
<i>Topai</i> / dough-boys (flour dumplings in a sweet coconut cream sauce)	419/2.72/1.01	395/3.47/0.90	411/3.68/1.25	292/1.94/1.02
<i>Laise</i> /rice	423/2.70/0.94	404/3.09/0.92	411/3.79/1.17	291/2.36/1.00
<i>Keke</i> / flour donuts (cooked in lard)	420/2.57/0.99	396/3.42/0.85	413/3.44/1.33	291/2.08/1.05
<i>Ifi</i> / Tahitian chestnut (<i>Inocarpus edulis</i>)	417/2.01/0.94	399/2.47/1.00	408/4.48/0.88	287/3.10/1.04
<i>Mei</i> / breadfruit (<i>Artocarpus altilis</i>)	421/1.77/0.83	412/1.75/0.78	414/3.28/1.43	291/1.90/0.98
<i>Ma tonga</i> (a type of starchy pudding made from plantain and coconut cream)	304/2.59/1.14	318/2.57/1.05	236/4.46/1.01	292/4.01/1.06
<i>Hopa</i> / plantain	373/1.79/0.91	381/1.96/0.81	382/3.47/1.29	292/2.26/0.95
<i>Pata</i> / plantain (<i>Musa paradisiaca</i>)	408/2.60/1.07	405/2.24/0.88	401/3.98/1.22	291/2.49/0.97

continued on next page

Table 3. Continued

<i>Hopa</i> / plantain	373/1.79/0.91	381/1.96/0.81	382/3.47/1.29	292/2.26/0.95
<i>Pata</i> / plantain (<i>Musa paradisiaca</i>)	408/2.60/1.07	405/2.24/0.88	401/3.98/1.22	291/2.49/0.97
' <i>Ufi</i> / yam (<i>Dioscorea alata</i>)	421/1.20/0.49	411/1.45/0.72	413/2.77/1.42	288/2.08/1.12
<i>Ma palangi</i> / bread	418/2.54/1.02	402/3.33/0.90	414/2.11/1.38	290/1.85/1.08
<i>Kumala</i> / sweet potato (<i>Ipomoea batatas</i>)	420/2.01/0.86	413/1.97/0.86	415/3.59/1.28	291/2.22/0.94
<i>Talo tonga</i> / taro (<i>Colocasia esculenta</i>)	421/1.52/0.82	415/1.40/0.67	412/3.26/1.38	291/2.32/1.02

mon element of the foods that clustered into each one. The factors were identified as imported foods, indigenous complex carbohydrates, uncommon traditional foods, and traditional meats and savory vegetables for the first to fourth factor, respectively. The factors accounted for 23.38, 15.37, 6.15, and 5.11% of the variance for imported foods, indigenous complex carbohydrates, uncommon traditional foods, and traditional meats and savory vegetables, respectively. The imported foods factor was comprised of flour noodles, bread (locally made), cabin biscuits, rice, doughboys (flour dumplings cooked in sugar syrup), donuts (flour dumplings cooked in fat), salt beef, sausages, imported chicken parts and turkey tails. The indigenous complex carbohydrates factor was comprised of items plantain (*hopa*), plantain (*pata*), sweet potato, breadfruit, yam, banana, taro, Tahitian chestnut, giant taro, and corn. The uncommon traditional foods factor was comprised of *ma tonga*, cabbage, goat, whale, horse, and dog. The traditional meats and savory vegetables factor was comprised of beef, octopus, shellfish, taro greens, pork, indigenous chicken (whole), hibiscus greens, and fish. The mean of the items loading on each factor served as indices and Cronbach's alpha index of internal consistency was 0.93, 0.86, 0.71, 0.78 for imported foods, indigenous complex carbohydrates, uncommon traditional foods, and traditional meats and savory vegetables, respectively.

A 2 (high and low socio-economic status - SES) x 4 (Food Type: imported foods, indigenous complex carbohydrates, uncommon traditional foods, and traditional meats and savory vegetables) mixed model Analysis of Variance (ANOVA) was conducted on perceived availability. There was a main effect of food type with people perceiving uncommon traditional foods ($M = 3.64$) as less available than indigenous complex carbohydrates ($M = 2.39$), imported foods ($M = 2.28$), or traditional meats and savory vegetables ($M = 2.14$), $F(3, 762) = 400.48$, $p < .0001$. LSD tests indicated that all means differed at the $p < .05$ level. This effect occurred in the context of a significant SES x food type interaction, $F(3, 762) = 9.17$, $p < .0001$. The pattern of this interaction is presented in Table 4. As is apparent from the table, the most profound difference between high ($M = 2.04$) and low ($M = 2.43$) SES participants was for imported foods. LSD tests indicated that this difference was significant at the $p < .05$ level and that no other comparisons of SES within food type were significant. Finally, the main effect of SES was nonsignificant, $F(1, 254) = 1.54$, ns.

Table 4. Means of Perceived Availability by SES and Food Type

	SES	Mean	Std. Deviation	N
Imported Foods	High	2.04	.63	94
	Low	2.43	.77	162
	Total	2.28	.75	256
Indigenous Complex Carbohydrates	High	2.41	.62	94
	Low	2.38	.67	162
	Total	2.39	.65	256
Uncommon Traditional Foods	High	3.68	.68	94
	Low	3.61	.66	162
	Total	3.64	.67	256
Traditional Meats & Savory Vegetables	High	2.14	.55	94
	Low	2.15	.6287	162
	Total	2.14	.5999	256

The main general conclusions to be drawn from the analyses are:

1. there were significant differences in the perceived availability of all the food types; and
2. these differences were themselves conditioned by SES; with
3. high SES differing significantly from low SES only in reference to the perception of the availability of imported foods.

For the purposes of this paper, it is the last of these conclusions that we are most concerned with. We see a pervasive pattern of higher SES people perceiving greater availability of imported foods. There are some fairly obvious reasons for the patterns we found. These reasons are not so much cultural as they are economic; we see pervasive patterns of consumption that are directly related to availability. Perception of availability of imported (and therefore store bought) foods is a product of differential access to cash by SES. We postulated that if we were to take the factor identified as imported foods in the availability analysis and explore it using the measures of preference, frequency, and perception of nutritional values by SES, we find that there is no significant difference between the high and low SES groups except insofar as frequency of consumption is concerned.

A series of t tests were therefore undertaken. When the preference ratings for the imported foods factor were examined, the results were that the category of high SES (N=98) had a mean preference for the items of 2.36, while the people in the low SES category (N=168) had a mean preference of 2.49. These differences were not significant, $t(264)=1.77$, ns. Perceptions of nutritional value of imported foods by SES (high SES, $n=97$, $m=2.79$; low SES, $n=166$, $m=2.88$) were also not significantly different, $t(261)=1.43$, ns. However, as we anticipated, the patterns of the frequency of consumption of imported foods were significantly different $t(262)=3.07$, $p<.003$ by SES (high SES, $n=96$, $m=3.25$; low SES, $n=168$, $m=3.48$). Thus, the perceptions of availability vary significantly with high SES people perceiving imported foods as more available than low SES people; the frequency of consumption is greater among high SES than low SES people. Perhaps as important, neither preference nor perceptions of nutritional value coincided with the patterns discernable in the frequency of consumption and perceptions of availability.

Conclusion

These results coincide with earlier analyses (9) which determined that among the most frequently consumed

foods investigated, preference was not particularly related to consumption. In an examination of the foods consumed more frequently than once a week, we demonstrated that the imported foods consumed most frequently did not have correspondingly high preference ratings, while traditional foods (except cassava) consumed most frequently did have correspondingly high preference ratings. In addition, the high rates of consumption of imported foods occurred in spite of, rather than in the absence of, knowledge about the nutritional value of both imported and traditional foods.

Reading preference as desire, the data collected indicate that contemporary patterns of desire are far more complicated than the valorization of foods that are perceived to represent the West/modern/foreign. Rather than the preference for the imported, we find the preference for the traditional. The analysis of food availability with reference to SES demonstrates that people working in the wage-earning sector of the economy are more likely to see imported foods

as easily available and in turn act on that perception through consumption. These conclusions are somewhat fraught by our assumption that the individuals surveyed can be taken as having access to cash (or not) on the basis of individual occupation (rather than the character of their household). Nonetheless, all other things being equal (and there is no reason to assume otherwise), those of high SES, the educated elite, seem to have a lesser, rather than greater, compliance to health warnings around foods. Again, this should alert us to the fact that dietary patterns, and the thus corresponding health problems, are related to food availability, not nutritional knowledge or food preference.

In the context of the MIRAB economy of contemporary Tonga, the availability of imported food is greater among those more integrated into the cash economy. The limits of the data used in this paper are such that we cannot say with precision how remittances fit into this pattern, but certainly the growth of the wage sector associated with economic development (including the growth of bureaucracy) is important. The possibility that the greater detrimental effects of poor diet, the "infectious cancer"²⁰ of the world trade in health compromising foods, is felt by the educated and professional classes first exposes a bump in the health transition. The fact that education and knowledge is *not* an issue is even more problematic; those that anticipate that public health campaigns and nutritional education will transform dietary patterns (in the face of evidence that the most educated people are those with the poorest diets) may wait a long time for results.

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End Notes

- E1. This survey was written first in English, translated into Tongan, and then back translated. Three Tongan speakers, Fusimalohi, Liava'a, and Taniela Fusimalohi, and Evans, who speaks Tongan as a second language, collaborated on these translations.
- E2. Main and outer islands are defined by the strength of their infra-structural links. In this survey only one sub-set of the sample, drawn from the island of Ha'ano qualified as an outer island (at the time of the survey the Ha'ano Island had no electricity, and travel to and from the island was via small boat. Although the survey was also undertaken in the Vava'u region, the village surveyed was close to Neiafu (the regional center), and thus well connected to national economic networks.
- E3. Socio-economic status was collapsed into two categories, "high" and "low" by amalgamating occupational categories on the basis of access to cash. Specifically the categories legislator/manager, professional/technician, clerk, service worker, and skilled agricultural/fisheries worker made up the "High SES" category; the occupations craft worker, domestic/subsistence worker, and student made up the "Low SES" designation. ■

You may be disappointed if you fail,
but you are doomed if you don't try.

Beverly Sills (1929). Opera singer and manager