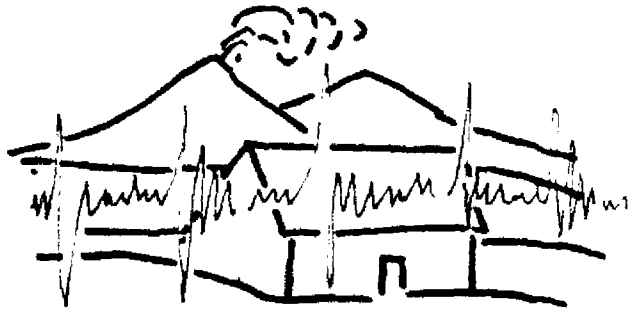
EMERGENCY FOOD PROGRAMS FOLLOWING THE GUATEMALAN EARTHQUAKE OF 1976

SUBSTANTIVE REPORT #3



GUATEMALAN EARTHQUAKE STUDY

Emergency Food Programs Following the Guatemalan Earthquake of 1976

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Preface

This is a preliminary report prepared on the basis of a partial analysis of the data available from the Guatemalan Earthquake Study. This study is being conducted using a longitudinal design which employs a control group. At this writing, control group data (from unaffected communities) are not yet available for comparison with the results obtained from damaged communities. Much of the information collected assumes comparisons with data yet to be gathered in Phase II and Phase III of this longitudinal study.

For these reasons the results reported here should be regarded as tentative until a full analysis has been completed. They are presented at this time as a progress report which may be of value to agency personnel and researchers interested in the reconstruction process following the February 1976 Guatemalan earthquake.

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Background

Before the 1976 earthquake two large private voluntary agencies, CARE and Catholic Relief, conducted extensive food distribution programs in Guatemala. This food distribution was carried on as part of child and maternal care programs or in connection with schools. The food utilized by CARE and Catholic Relief, for the most part, was drawn from Public Law 480 foods. This law provides that agricultural commodities be purchased in the U. S. by the Commodity Credit Corporation of the Department of Agriculture at support prices and then be made available for distribution in foreign areas through the U. S. Agency for International Development. According to Froman, Gersony and Jackson, in their "General Review, Public Law 480 Assistance in Guatemala," June 1977, some 111,000 tons of such commodities had been distributed in Guatemala between 1959 and 1975 (see Page 4).

When the earthquake of February 1976 occurred, emergency food supplies made available through Public Law 480 by way of the Agency for International Development were distributed by CARE and Catholic Relief. According to the above mentioned document, some 17,800 tons of basic grains and 7,600 tons of other food products were distributed through these agencies, some to disaster victims and the remainder through regular food programs. According to a CARE administrative report, they distributed approximately 10 million pounds of food through regular food distribution programs. An additional 5.1 million pounds were distributed for emergency purposes. Figures from Catholic Relief on food distribution in 1976 are not available in the same form to the authors at present. However, it is known that CARE distributed approximately 54 percent of all Public Law 480 foods in Guatemala at the time of the earthquake. These figures seem to indicate that somewhat less than 10 million pounds of emergency food were distributed in Guatemala following the earthquake.

Considerable controversy has developed concerning the need for emergency

food distribution and concerning the long range effects of such distribution on the Guatemalan economy. This report summarizes data obtained from interviews with a sample of approximately 1100 household heads in the heavily damaged areas of Guatemala. These interviews were conducted between July of 1977 and October, 1978. During the course of the interviews, a number of questions concerning food programs were asked. These questions were designed to determine household members' perception of food need in the period following the earthquake and to explore the distribution of disaster related foods to households. They also examined agricultural production and consumption patterns. In addition, questions were asked concerning the effects of the earthquake on food prices in local communities.

While the results of these interview questions offer data related to the food problem following the earthquake, the kind of information that they yield is largely opinion or attitudinal data. In this report we will take a preliminary look at the results of these interview questions and relate them, where possible, to the controversy over food distribution.

Distribution and Food Need as Reported by Interviewees

The household interview contained questions concerning food distribution after the earthquake. These questions can be used to determine how household heads perceived their situation with respect to food during the first year following the disaster. Caution should be exercised in interpreting the data generated by these questions. It is important to keep in mind at all times that they represent "opinions" or "recollections" of the post-disaster situation and not direct measures of that situation taken at the time to which they apply.

Perception of Food Shortage

Household heads were asked, "After the earthquake was there a shortage of food here in this house?" The responses to this question, classified by community and by region, are given in Table 1. Over three-fourths (78%) of all households

reported an earthquake-related food shortage. The number reporting a shortage, however, varies considerably by community. In the Highlands over ninety percent of the households in San Martin Jilotepeque and nearby Las Lomas reported a food shortage, while nearer the Pan American Highway in Patzun and Zaragoza slightly less than three-fourths of the residents reported being short of food. In the East and in the City slightly fewer households reported shortages but variations among communities are observed in these regions also. Examination of the data in terms of community type shows that city neighborhoods, departmental capitols, municipios and aldeas differed little in the proportion of their residents who reported a food shortage in their individual households (Table 2).

Household heads who reported a food shortage (N=839) were asked to specify what foods were in short supply. Respondents could answer this question with any response related to foods and could name up to six different foods that were in short supply, depending on their own definitions of their individual food situations. Table 3 presents a tabulation showing the number of people who mentioned shortages of the most commonly consumed foods, classified by region. It can be seen that the two primary staple foods eaten by most rural Guatemalans, beans and corn, were reported to be in short supply by a comparatively large number of respondents. Around 52 percent of all households reported that beans were in short supply in their individual homes and nearly 48 percent reported that corn was in short supply. On a whole, the shortages of foods in individual households seem to have been greater in the East and the City than in the Highlands. In interpreting the responses to this table, it should be remembered that the question asked what specific foods were in short supply in the household of the respondent. The respondent could answer by naming any kind of food or by saying that there was no shortage. The respondent was not asked about specific foods but was allowed to volunteer his own response. This means that about half of all respondents voluntarily mentioned a shortage of corn and beans.

Critics of the food distribution programs executed by various agencies following the earthquake have claimed that there was sufficient supply of these primary foods on hand in Guatemala at the time of the disaster. According to them, a bumper harvest had just taken place and enough corn and beans were available in local storehouses to satisfy the food need of disaster victims. It is further claimed that the distribution of food by agencies disrupted the normal market process and competed with local farmers and food merchants, lowering their income as a consequence.

Whether or not there was a shortage of food in the sense of there being enough on hand somewhere within Guatemala to satisfy the food needs of disaster victims, there appears to have been a rather severe shortage of food in the households of disaster victims, at least for a period following the earthquake. Of course, the disaster disrupted normal distribution channels. It also buried the supplies of food under the rubble. It is possible therefore for individual households to report food shortages at the same time that large supplies of food lay elsewhere unavailable to victims.

Another critical issue concerns the length of time that the reported food shortage persisted. Household heads who reported a food shortage in their homes were asked how long the shortage lasted following the earthquake. Table 4 shows the distribution of answers to this question for the three regions. It can be seen that nearly two-thirds reported that the shortage lasted less than a month (47.2 percent).. Since disaster related food distribution programs took some time to organize, the drop in food shortages during the latter part of the second month is probably due to these programs taking full effect and also to the normal marketing procedures being reestablished after that time. Even so, around 18 percent of all respondents reported a disaster-related food shortage lasting over three months.

In interpreting these figures it is important to realize that many Guatemalan households experience a chronic food shortage due to the lack of financial resources even when it is available in local markets. Many people live a hand-to-mouth existence and when sources of income are cut off, as they were for a period following the earthquake, food shortages in individual households are immediate. In addition, most rural Guatemalans do not obtain all of their food through their own agricultural activities but depend upon a money economy to do so.

During the interview respondents were asked what proportion of the food they consumed at home is produced by the household unit itself. The results of this question are shown by region in Table 5. When all three regions are taken together, around 58 percent of the respondents reported that they produced none of the food they consumed. This figure, however, is highly weighted by responses given in the City, where almost 98 percent produced no food consumed in the household. When the Highlands and the East are compared it can be seen that in the East, around El Progreso, 64 percent reported producing no food consumed in the household as compared to 27 percent in the Highlands. At the other extreme, only about 4 percent in both the Highalnds and the East produce 75 percent or more of the food that they consume. This table demonstrates that virtually all families studied were dependent in some degree on outside sources of food at the time of the earthquake. When these sources were disrupted and sufficient food was not stored, perceived food shortages developed.

Table 6 shows the number of households that produced corn and beans in 1975 and 1976. The agricultural year which is relevant to the earthquake is 1975. Since the earthquake occurred in February of 1976, it was the agricultural production of 1975 which supplied the food available for consumption at that time. It can be seen from this table that, taking all areas together, around 53 percent of all respondents reported that they produced neither corn nor beans. Again this figure

is heavily overweighted by the City where 95.6 percent produced neither crop. Nevertheless it is apparent that in the East fewer people produced these primary foods than in the Highlands. There, around 47 percent produced no corn or beans as compared to around 27 percent in the Highlands. It appears from these tabulations that around half of the respondents to various questions reported producing no food for home consumption, meaning that they were entirely dependent upon the market for their supply of food. When normal market procedures were disrupted temporarily by the earthquake these families suffered a food shortage of varying duration. We will return to Table 6 later to compare food production in '75 with food production in '76. However, it can be seen that fewer families produced food in the year following the earthquake than produced it prior to that time.

Sources of Food Following the Earthquake

The interview schedule contained a question asking respondents how they obtained food following the earthquake. The results of this question are given in Table 7. A respondent could answer this question by giving three separate sources of food. As a consequence, the number of responses can exceed the number of respondents. The percentages given in this table show the proportion of all 1077 respondents said they bought food at a store in town. This represented the most frequent response. As can be seen, City respondents reported this source more frequently than individuals in the Highlands and in the East. The second most frequent response was that they received food as a donation from a relief agency. This source was given by 50.2 percent of all respondents. However, the Eastern region stands out as the area in which the largest proportion of individuals reported receiving food from a relief agency. There, two-thirds of all respondents gave this response as compared to 57 percent in the Highlands and 58 percent in the City.

Of interest in the controversy over the availability of food in storage at the time of the earthquake are the two responses, "Obtained food from personal storage which was undamaged," and "Obtained food from personal storage which was damaged." In the Highlands about 33 percent of the respondents said they obtained food from undamaged personal storage and around 4 percent from damaged personal storage. In the East, however, only around 13 percent claimed to have obtained food from personal undamaged storage and only one individual said they obtained it from damaged storage. In the City the food situation was of course entirely different than elsewhere. Even so, 10 percent of the individuals claimed they obtained some food from personal storage which was undamaged. Taken together, these responses seem to indicate that food stored in the household was of assistance in the early days following the earthquake to only relatively few individuals. Most depended upon normal commercial channels or upon relief agency food. The kinship network and friends were a source of food for about 17 percent of all respondents. This source seems to have been more heavily involved in the City than in the two rural regions.

The question upon which the above table was based asked respondents how they obtained food following the earthquake and suggested no particular response categories to them. Instead, they were allowed to give three separate responses and the interviewer recorded these responses in terms of a set of pre-coded categories. In other words, they were not asked a question such as, "Did you receive food from an agency?" in this particular part of the interview. However, later on they were asked the specific question, "Did you receive any free food from a relief agency?" The results of this question are shown in Table 8. This table shows that when all regions are taken together, around 69 percent reported receiving food from an agency. There is, however, a marked difference between the East and the other two regions. There 83 percent report having received

food from such a source, as compared to 65 percent in the Highlands and 62 percent in the City.

These figures show a higher proportion of persons receiving food from an agency than those given in Table 7, where the responses were voluntary. The regional differences, however, are similar in the two tables. In both cases more families in the East report receiving food from an agency than in the Highlands and the City. These two latter regions are similar in the proportion reporting agency food sources in the two tables. It is probably true that over two-thirds of the households studied received food from an agency. In the next section we will examine what foods were received and whether they were related to food shortages.

Food Received from Agencies

Those respondents who reported receiving food from an agency were asked what foods they received. They could report up to six different foods. The interviewer did not suggest what responses they could make but respondents were allowed to name whatever food they wished. Table 9 presents a tabulation showing the most common foods consumed by Guatemalans and the number who received such food from agencies in the three study regions. The most frequently reported food donated by agencies was beans. Fifty-three percent of the families reported receiving them. A much higher proportion of families in the East than in the other two regions received beans as a free food from an agency. This is a result of a large distribution program which took place over a year period following the earthquake called, "The Beans for Work Program."

Rice was the second most commonly distributed agency food. About 43 percent of all families reported receiving it. Families in the East received this food more frequently than those in the Highlands or City where the proportions are similar.

Corn was the third most commonly reported (37.5%) free food from an agency. Again, more families in the East received this product than in the other two

regions. In the Highlands, where it will be recalled much more corn is produced than in the East, only about 29 percent of the families reported receiving corn from an agency. Sugar was received by nearly 24 percent of the families, and high protein type flour, such as Incaparina, was received by 22 percent. Less than 10 percent of the families reported receiving the other types of food listed in Table 9.

It is interesting to compare this table with Table 3 which shows the foods reported to be in short supply. Table 3 shows that almost 54 percent of the people reported beans to be in short supply. Beans ranked first in terms of the number of people reporting a shortage. Beans also ranked first in terms of the number of families reporting receiving them as free food. Corn, which ranked second in terms of shortage, ranked third in terms of free food received.

Table 10 gives a detailed comparison of the number of families reporting the need for various food and the number of families receiving that food. It also shows the percent of those needing a food who received it. It shows that the distribution of corn and beans came fairly close to matching need, at least as far as the number of families expressing need and receipt of food is concerned. The distribution of flour and meal and of high protein grain mixtures, such as Incaparina, far exceeded the needs expressed by families. It should be remembered however that need here means that a respondent, without prompting from an interviewer, stated that a given food was in short supply. Very few people mentioned any kind of flour or meal. The distribution of lard and oil, and of rice, seems to have somewhat exceeded needs but not to the extent that is true of flour and meal. Other foods listed fell below expressed needs, but generally represent items less vital to survival in the short run under emergency conditions.

Need as Compared to Food Distribution

It is apparent from the data presented in previous tables, and from information obtained from other sources, that the food distribution programs

carried on by various agencies in Guatemala following the earthquake were extensive. The question arises, however, "Was the food which was distributed given to those persons who were most in need of food assistance?" Table 11 gives a cross-tabulation which shows those households which reported food shortages compared to those households which received food. Seventy-three percent of those reporting a food shortage in the household also reported receiving free food from an agency. Compared to this, 54 percent of those who said there was no food shortage received free food.

There is a statistically significant relationship between these two variables (Chi-Square - 30.28 with 1 degree of freedom). Those who reported a food shortage were more likely to receive free food than those who reported no shortage. However, a substantial number of persons with food shortages received no free food from an agency (27%) and similarly a fair number who had no shortage did receive it (54%). This analysis suggests that while food reached people who perceived no need, the majority of households that reported a shortage received food benefits.

Another way of measuring need as compared to assistance is to compare those people who produced relatively little of the food consumed in the home to those who produced a substantial proportion of their own food needs with respect to whether they received food assistance or not. Table 12 shows that 68 percent of those who produced less than half of their food received food from an agency but almost 75 percent of those who produced more than half of their food also received food from an agency. There is,however, no statistical relationship between the two variables. It appears that the proportion of food produced at home is not related to whether persons received food assistance from agencies. It will be recalled that only a small proportion of people actually produced more than half of the food they consumed and very few produced over three-fourths of it. It is probably true that the food shortage affected both those who produced and those who did not produce food in differing degrees. These two tables of

course do not reflect the amount of aid received by each family and therefore only approximate a test of whether those in need of food actually received it in greater proportion than those who did not.

Other tabulations were done to determine whether specific primary foods were distributed to individuals who reported a shortage of those specific foods. For example, those who reported a shortage of corn were compared to those who received corn. Table 13 shows the results of these tabulations for corn, beans, and rice. In the case of corn, 46 percent of those reporting a shortage of corn received corn from an agency; but 54 percent with such a shortage did not receive such assistance. Sixty-one percent reporting a shortage received beans and 38 percent did not. Fifty-four percent with a rice shortage received rice and 46 percent did not. In all of these tables there is a relationship between the existence of a shortage and receipt of agency food.

Another way to approach the problem of need as compared to food distribution is to examine the data available on the agricultural production which was included in the interview schedule. Table 14 examines whether people received free food from an agency in terms of whether they produced the two most common primary crops -- corn and beans. This table shows that 66 percent of the people who produced neither corn nor beans received food from an agency. However, 73 percent of those who produced both crops also received food from an agency. In order to intepret this table it is necessary to examine whether those persons producing these two foods also reported a shortage of corn and beans. This would indicate the degree to which their production satisfied their own needs. Table 15 shows that slightly over 32 percent of those individuals who reported producing both corn and beans reported a shortage of corn in the household and 43 percent reported a shortage of beans. Of those who report producing neither, 57 percent reported a shortage of corn and 56 percent a shortage of beans. A sizeable proportion of our respondents reported shortages of corn and beans in

households which produced these two products. Even so, when we re-examine Table 14 it appears that quite a few people who produced these products and might have supplied at least part of their own needs, received these commodities from an agency.

Perceived Changes in Food Prices

Critics of the food distribution program in Guatemala following the earthquake said that these programs lowered normal market prices and competed with local farmers, thus reducing their income. It was maintained that so much free food was distributed that individuals did not need to buy food in the market. As a consequence, food growers could not sell their products and thus lost income. It would seem reasonable to expect that if this did occur, food prices would have decreased as a result of the excess of supply over demand. However, it can be assumed that if shortages were present due to disruption of normal marketing procedures, and less than the amount of food needed was actually available for sale, food prices would have increased.

In order to evaluate this argument, respondents were asked their opinions of what happened to food prices in their communities following the earthquake. The specific question asked was, "Do you think the food prices in this town changed after the earthquake?" Respondents could answer any way they saw fit, but answers were coded by interviewers into four pre-coded categories: "no," "yes," "prices decreased," "yes," "prices increased," and "other." The "other" category would include such responses as "food prices varied or fluctuated." A "no answer" category was also provided.

It is reasonable to expect that persons who produced food, and were likely to sell it to others as a source of income, would be most likely to perceive prices as going down if they indeed declined. Their bias, in other words, would be in this direction. However, those who depended on other producers from whom to buy their food would be more likely to perceive prices as increasing since their interest would be in lower food prices. In other words, there is a

possibility that the consumers of food and the sellers of food would disagree on what happened to prices.

Tables 16 and 17 cross-classify perceptions of price change with different measures of the consumption or production of food. Table 16 compares the proportion of food consumed at home which is produced by household members with perception of price change. About 80 percent of all respondents said prices in their communities increased. About 15 percent said that no change took place in food prices. Only 3 percent of all subjects reported decreases in food prices. When those who produce corn and beans are compared to those who produce neither, almost identical percentages say food prices increased. It appears that the majority of respondents, regardless of their economic interests in food prices, report a rise in the cost of food following the earthquake. These observations indicate that the distribution of food by agencies did not fulfill all of the needs of households for food in the early months following the earthquake.

In evaluating these results it is important to distinguish between the effects of emergency food distribution programs on the short range economic status of food producers and the long range effects of regular food distribution programs carried on as part of development activities. It is possible that long range food distribution programs have the effects pointed out by critics of food programs and at the same time for the emergency programs associated with a short range crisis in food distribution such as the 1976 earthquake not to display these effects.

The normal food distribution system which depended on commercial channels was severely disrupted by the earthquake. Short term food shortages were observed. For a month or so, emergency measures were required, even though it is probably true that adequate stores of food were present in the country, but inaccessible because of the disaster. Once these stores became available, a surplus of

food may have occurred and had adverse effects on food producers.

One piece of evidence supports the claims of the critics. Table 6 shows the number of households that produced corn and beans in 1975 and 1976. In the year before the earthquake 47 percent of the respondents reported producing corn or beans or both, but in 1976 only 42 percent reported doing so. In other words, about 5 percent fewer households report producing these two primary food products in the agricultural year following the earthquake.

There could of course be a variety of reasons for this reduction other than the competition offered by free foods from outside the country. For example, loss of labor due to deaths within the family could be one reason, although our data on deaths suggest that this is not the case. Another reason for this reduction in the number of agricultural producers could be competing opportunities for employment in reconstruction related activities.

Nevertheless this trend is in the direction predicted by the critics of food programs and will be watched carefully as data from Phases II and III of this project become available.

TABLE 1

Was There a Shortage of Food in this House?
Classified by Region and Community

Region and Community	No		Yes		Total	
	No.	%	No.	%	No.	%
Highlands						
Chimaltenango	26	18.7	113	81.3	139	100.0
Patzun	29	27.4	77	72.6	106	100.0
San Martin	5	7.7	60	92.3	65	100.0
Zaragoza	21	26.6	58	73.4	79	100.0
Las Lomas	1	4.6	21	95.4	22	100.0
Santa Maria Cauque	5	20.0	20	80.0	25	100.0
San Marcos & Pacoc	5	20.0	20	80.0	25	100.0
Total	92	20.0	369	80.0	461	100.0
East						
El Progreso	21	26.6	58	73.4	79	100.0
Sanarate	18	16.4	92	83.6	110	100.0
Santo Domingo	7	25.0	21	75.0	28	100.0
Conacaste	4	14.3	24	85.7	28	100.0
San Juan	11	47.8	12	52.2	23	100.0
Espirtu Santo	9	36.0	16	64.0	25	100.0
Total	70	23.9	223	76.1	293	100.0
City						
Asentamiento del Roosevelt	14	26.4	39	73.6	53	100.0
Colonia la Carolingia	16	15.8	85	84.2	101	100.0
4th of February	28	23.9	89	76.1	117	100.0
New Chinautla	15	30.6	34	69.4	49	100.0
Total	73	22.8	247	77.2	320	100.0
Total All Regions	235	21.9	839	78.1	1074	100.0

TABLE 2

Reported Food Shortages in Various Types of Communities

Community Type	No Shortage		Shortage		Total	
	No.	%	No.	%	No.	%
City	73	22.8	247	77.2	320	100.0
Department Capitol	47	21.6	171	78.4	218	100.0
Municipio	73	20.3	287	79.7	360	100.0
Aldea	42	23.9	134	76.1	176	100.0
TOTAL	235	21.9	839	78.1	1074	100.0

TABLE 3

Foods in Short Supply Classified by Regions

Foods in Short Supply	Highlands		East		City		Total	
	No.	% *	No.	% *	No.	% *	No.	% *
Corn	168	36.1	157	53.6	190	59.4	513	47.6
Beans	210	45.2	178	60.8	177	53.3	566	52.5
Sugar	217	46.7	119	40.6	125	39.1	460	42.7
Lard or Oil	14	3.0	25	8.5	12	3.8	51	4.7
Coffee	106	22.8	80	27.3	32	10.0	218	20.2
Salt	84	18.1	34	11.6	10	3.1	128	11.9
Fresh Vegetables	36	7.7	4	1.4	1	0.3	41	3.8
Flour or Meal	0	0.0	7	2.4	1	0.3	8	0.7
Rice	126	27.1	103	35.2	76	23.8	305	28.3
Meat	108	23.2	17	5.8	41	12.8	167	15.5
Other Flour or Incaparina	39	8.4	7	2.4	8	2.5	53	4.9
Other Beans	0	0.0	0	0.0	0	0.0	0	0.0
TOTAL Respondents	465	100.0	293	100.0	320	100.0	1078	100.0

* Percentages are based on total number of respondents in the sample in each region. Percentages add to more than 100% because a person could list several different foods.

TABLE 4

Reported Length of the Food Shortage Classified by Regions

Reported Duration of Food Shortage	Highlands		East		City		Total		Cumulative Percent
	No.	%	No.	%	No.	%	No.	%	
Less than 2 weeks	80	21.1	29	12.9	59	23.9	168	19.7	19.7
Two weeks to 1 month	113	29.8	47	20.9	74	30.0	234	27.5	47.2
One to two months	61	16.1	49	21.8	47	19.0	157	18.4	65.6
Two to three months	36	9.5	32	14.2	27	10.9	95	11.2	76.8
Over three months	74	19.5	50	22.2	33	13.4	157	18.4	95.2
No Information	15	4.0	18	8.0	7	2.8	40	4.7	99.9
TOTAL	397	100.0	225	100.0	247	100.0	851	100.0	100.0

TABLE 5

Proportion of Food Consumed Which is Produced by the Household Unit

		None	25%	50%	75%	100%	No Information	Total
Highlands								
	No.	127	193	129	17	0	0	466
	%	27.2	41.4	27.7	3.6	0.0	0.0	100.0
East								
	No.	188	60	31	11	2	0	292
	%	64.4	20.6	10.6	3.8	0.7	0.0	100.0
City								
	No.	313	6	0	0	0	1	320
	%	97.8	1.9	0.0	0.0	0.0	0.3	100.0
TOTAL								
	No.	628	259	160	28	2	1	1078
	%	58.3	24.0	14.8	2.6	0.2	0.1	100.0

TABLE 6

Production of Corn and Beans, 1975 and 1976, Classified by Regions

Region	Yr.	Neither Corn nor Beans		Corn Only		Beans Only		Both Corn and Beans		TOTAL	
		No.	%	No.	%	No.	%	No.	%	No.	%
Highlands	'75	127	27.4	73	15.7	2	0.4	262	56.5	464	100.0
	'76	151	32.5	72	15.5	2	0.4	240	51.6	465	100.0
East	'75	137	46.8	79	27.0	0	0.0	77	26.3	293	100.0
	'76	159	54.3	67	22.9	1	0.3	66	22.5	293	100.0
City	'75	305	95.6	7	2.2	2	0.6	5	1.6	319	100.0
	'76	313	97.8	5	1.6	0	0.0	2	0.6	320	100.0
Total	'75	569*	52.9	159	14.8	4	0.4	344	32.0	1076	100.0
	'76	623	57.8	144	13.4	3	0.3	308	28.6	1078	100.0

Total of 54 less producers of food out of 1078 or 5.01% less.

TABLE 7

Sources of Food Following the Earthquake

How Food was Obtained	Highlands		East		City		Total	
	No.	%	No.	%	No.	%	No.	%
From personal storage which was undamaged	150	32.7	39	13.4	32	10.0	223	20.7
From personal storage which was damaged	20	4.3	1	0.3	0	0.0	21	2.0
From friends and relatives (bought or given)	65	14.0	49	16.8	69	21.6	183	17.0
Bought at store in town	225	49.4	129	44.2	219	68.4	573	53.2
Bought in store in another town	36	7.7	30	10.3	10**	3.1	76	7.1
Bought in Guatemala City	33	7.1	17	5.8	4**	1.2	54	5.0
Donated by Relief Agency	263	56.6	193	66.1	185	57.8	541	50.2
Other	0	0.0	3	1.0	3	0.5	6	0.6
No Information	2	0.4	1	0.3	0	0.0	3	0.3
Total Respondents*	465	100.0	292	100.0	320	100.0	1077	100.0

*This total is used as basis for percentages. A respondent could name as many as three sources of food. Therefore, percentages in columns do not add up to 100.0.

** Some of the individuals now living in Guatemala City formerly lived outside the city. However, during the emergency period they bought food there.

TABLE 8

Received Free Food from an Agency

Region	No		Yes		Total	
	No.	%	No.	%	No.	%
Highlands	159	34.7	299	65.3	458	100.0
East	49	16.8	242	83.2	291	100.0
City	121	37.8	199	62.2	320	100.0
TOTAL	329	30.8	740	69.2	1069	100.0

TABLE 9

Free Food Received from Agencies Classified by Region

Types of Food Received from Agencies	Highlands		East		City		Total	
	No.	%	No.	%	No.	%	No.	%
Corn	134	28.8	157	53.6	114	35.6	404	37.5
Beans	202	43.4	204	69.6	167	52.2	573	53.2
Sugar	133	28.6	66	22.5	59	18.4	258	23.9
Lard or Oil	52	11.2	25	8.5	17	5.3	91	8.4
Coffee	41	8.8	30	10.2	13	4.1	84	7.8
Salt	52	11.2	25	8.5	10	3.1	88	8.2
Fresh Vegetables	2	0.4	2	0.7	0	0.0	4	0.4
Flour or Meal	2	0.4	17	5.8	4	1.2	23	2.1
Rice	170	36.6	153	52.2	115	35.9	467	43.3
Meat	13	2.8	9	3.1	28	8.8	49	4.5
Other Flour or Incaparina	121	26.0	52	17.8	62	19.4	235	21.8
Other Beans	18	3.9	10	3.4	8	2.5	36	3.2
TOTAL No. of Respondents	465	100.0 *	293	100.0 *	320	100.0 *	1078	100.0

* Total number of respondents was used as a base for the percentages. The columns add to more than 100% because people could have received several free foods.

TABLE 10

Food Need as Compared to Food Distribution

Food Type	No. of Families Reporting Need	No. of Families Receiving Food	% of Need Met by Distribution
Corn	513	404	78.8
Beans	566	573	101.2
Sugar	460	258	56.1
Lard/Oil	51	91	178.4
Coffee	218	84	38.5
Salt	128	88	68.8
Fresh Vegetables	41	4	9.8
Flour or Meal	8	23	287.5
Rice	305	467	153.1
Meat	167	49	29.3
Other Flour, Incaparina	53	235	443.4
Other Beans	0	36	--
Total Respondents	1078	1078	100.0

TABLE 11

Food Shortages in Households Classified by Whether Household Received Free Food from an Agency

	Received Free Food					
	No		Yes		Total	
Food Shortage	No.	%	No.	%	No.	%
No	104	45.8	123	54.2	227	100.0
Yes	227	26.8	619	73.2	846	100.0
TOTAL	331	30.8	742	69.2	1073	100.0

$X^2 = 30.282$ with 1 degree of freedom $P < .001$

TABLE 12

Proportion of Food Produced at Home Classified by Whether Free Food Was Received or Not

Food Produced	Food Received					
	No		Yes		Total	
	No.	%	No.	%	No.	%
Less than 50%	282	32.0	600	68.0	882	100.0
50% or more	48	25.4	141	74.6	189	100.0
TOTAL	330	30.8	741	69.2	1071	100.0

$X^2 = 3.019$, 1 df. $P < .05$

TABLE 13

Shortages of Corn, Beans and Rice
Classified by Whether These Foods Were Received from an Agency

Shortage of Corn	Received Corn					
	No		Yes		Total	
	No.	%	No.	%	No.	%
No	399	70.5	167	29.5	566	52.5
Yes	276	53.8	237	46.2	513	47.5
TOTAL	675	62.6	404	37.4	1079	100.0

Shortage of Beans	Received Beans					
	No		Yes		Total	
	No.	%	No.	%	No.	%
No	291	56.6	223	43.4	514	47.6
Yes	217	38.4	348	61.6	565	52.4
TOTAL	508	47.1	571	52.9	1079	100.0

Shortage of Rice	Received Rice					
	No		Yes		Total	
	No.	%	No.	%	No.	%
No	500	64.7	273	35.3	773	71.6
Yes	142	46.4	164	53.6	306	28.4
TOTAL	642	59.5	437	40.5	1079	100.0

TABLE 14

Received Free Food from an Agency Classified by Production of Primary Crops in 1975

Crop Production	Received Free Food from Agency					
	No		Yes		Total	
	No.	%	No.	%	No.	%
Neither Corn Nor Beans	193	34.0	374	66.0	567	53.0
Only Corn	43	27.6	113	72.4	156	14.6
Only Beans	1	25.0	3	75.0	4	0.4
Both Corn and Beans	93	27.1	250	72.9	343	32.1
TOTAL	330	30.8	740	69.2	1070	100.0

TABLE 15

Crop Production in 1975 by Reported Shortage of Corn and Beans After the Earthquake

Crop Production	Household Shortage of Corn						Household Shortage of Beans					
	No		Yes		Total		No		Yes		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Neither Corn Nor Beans	242	42.5	327	57.5	569	52.9	253	44.5	316	55.5	569	52.9
Only Corn	90	56.6	69	43.4	159	14.8	61	38.4	98	61.6	159	14.8
Only Beans	1	25.0	3	75.0	4	0.4	1	25.0	3	75.0	4	0.4
Both Corn and Beans	232	67.4	112	32.6	344	32.0	197	57.3	147	42.7	344	32.0
TOTAL	565	52.5	511	47.5	1076	100.0	512	47.6	564	52.4	1076	100.0

TABLE 16

Opinion of Food Price Changes Classified by Proportion of Food Consumed that is Produced by the Household

Proportion of Food Produced by Household	Perception of Price Change											
	No Change		Prices Decreased		Prices Increased		Other		No Answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
None (0%)	92	14.6	20	3.2	495	78.8	1	0.2	20	3.2	628	58.3
Some (25%)	37	14.3	9	3.5	210	81.4	0	0.0	2	0.8	258	24.0
Half (50%)	23	14.4	3	1.9	128	80.0	0	0.0	6	3.8	160	14.9
Almost All (75%)	6	21.4	0	0.0	22	78.6	0	0.0	0	0.0	28	2.6
All (100%)	1	50.0	0	0.0	1	50.0	0	0.0	0	0.0	2	0.2
TOTAL	159	14.8	32	3.0	856	79.6	1	0.1	28	2.6	1076	100.0

TABLE 17

Opinion of Food Price Changes Following the Earthquake Classified by Primary Crop Production in 1975

Crop Production in 1975	Perception of Price Change											
	No Change		Price Decreased		Price Increased		Other		No Answer		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Neither Corn Nor Beans	78	13.7	18	3.2	453	79.6	1	0.2	19	3.3	569	52.9
Only Corn	32	20.2	7	4.4	116	73.4	0	0.0	3	1.9	158	14.7
Only Beans	0	0.0	0	0.0	4	100.0	0	0.0	0	0.0	4	0.4
Both Corn and Beans	50	14.5	7	2.0	281	81.7	0	0.0	6	1.7	344	32.0
TOTAL	160	14.9	32	3.0	854	79.4	1	0.1	28	2.6	1075	100.0