THE IMPACT OF RECOVERY AID.
FIVE YEARS AFTER HURRICANE FIFI

By.

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INTRODUCTION

This research was undertaken nearly five and one-half years after Hurricane Fifi struck the north coast of Honduras and left many thousands dead and hundreds of thousands homeless. (Snarr and Brown 1979) Our intent in this research was to measure the impact of aid on the small farmers targeted as those most in need of such assistance following the disaster.

The last two decades have witnessed a variety of attempts to assess the long-term impact of natural disasters. Cameron Parish Louisiana was analyzed four years after it was struck by Hurricane Audrey in 1957. Bates et. al. (1963) found general support for the hypotheses that the disaster had 'acceleration effects" on the changes that were in process before the event. Since Cameron Parish was a growing and prospering community before the hurricane several positive results followed. The negative results primarily affected the black minority that lived along the coast.

A few years after the 1964 Alaska Earthquake, Dacy and Kunreuther (1969) measured the long-term effects of that event and found that because of the influx of government funds the area was actually much better off than prior to the disaster. Cochrane (1975) surveyed several disasters that occurred between 1965 and 1972 and found that the impact of these disturbances was not randomly spread throughout the population.

Much like the blacks in Bates' study, the poorest segment bore a disproportionate share of the burden.

Haas Kates, and Bowden studied four very different cities that experienced major disasters and found four conditions related to recover. These are. 1) the magnitude of damage and loss, 2) resources for recovery 3) prevailing disaster trends, and 4) leadership planning and organization. (1977 12-19). In 1979, Friesema et. al., also analyzed four communities and concluded that none experienced major long-term economic loss. They say "...it appears to us that the American (U.S.) society and policy has become so knit together and the economy so integrated that by the mid-twentieth century that most of the economic costs of natural disasters are externalized to the larger carrying society." (1979:178)

Wright and associates analyzed a large sample of census tracts counties and SMSA's that experienced natural disasters and compared them to a control sample that did not experience such events. Using census data they found that "For the period 1960 to 1970 there are no discernible effects of the natural disaster events occurring in that period which materially altered population and housing growth trends for counties or for census tracts. (1979:27) A very recent study of six communities by Rubin concluded that there are two factors related to recovery. 'The number one determinant of expeditious effective (successful) recovery is prior experience with the same or a similar disaster agent.' (1981.18) A second and related determinant is "...a continuing relationship with the state and federal government, which in turn provides local officials (and citizens and business

leaders, too) with knowledge about an array of programs and services available." (1981 18)

Generally, there is little from the North American studies that can be applied to Hurricane Fifi in Honduras. It is probably true, as Bates, et. al. indicate, that the pre-disaster trends were accelerated. It is also true, as several studies mention, the most vulnerable suffer. As Baisden and Quarantelli observe, 'In recovery, as in many other situations, those who are most isolated--whether physically or socially --those with the fewest resources, and those who make the least noise are subject to oversight, discrimination and inequality in the provision of services. (1979:10)

Beyond these types of truisms however, there is relatively little that studies of urban disasters can contribute to an understanding of rural, third world disasters. (However, it must be mentioned that Managua, Nicaragua was included in the Haas, Kates and Bowden study.) In this area of Honduras there was not a massive influx of monies to rebuild the infra-structure (many bridges are not yet rebuilt) or loans to those who lost their houses. The aid that was received came from international sources and as this study indicated, was too little or, often, misappropriated. Unlike the U.S., Honduran society is not integrated so that most economic losses are externalized to the larger carrying society. (Friesema, et. al.) Previous experience with a disaster (Rabin) is also of little value if there are not available resources with which to work and when most energies are expended to meet the basic needs of life. Although the "Impact Ratio" (Wright) is undoubtedly very high it cannot even be calculated due to the lack of

base data. Such statements coming from studies of urban, industrial societies as, "... the most serious disasters are those striking the most resourceful communities (large communities present better targets) and "...relief aid also increases with disaster severity." certainly do not apply here. (Wright et. al.:207)

The idea of this program was to provide the incentives and means for farming families affected by Hurricane Fifi to leave refugee centers and other places where they were temporarily residing and return to their farmlands to plant their basic grains within the planting season that ended in December 1974. Once assisted in this program it would be presumed that these rural, small-scale farming families would be self-reliant insofar as they would not depend on relief assistance beyond the time of their first harvest. This activity coincides with what Baisden and Quarantelli identify as "recovery." "Recovery refers to conscious disaster-linked non-emergency activities which would not otherwise have been undertaken." (1979:2) The recovery aid in this instance was coming from international relief agencies.

In order to provide this assistance, it was initially hoped that counterpart organizations already operating in local areas could be utilized. It soon became apparent, however, that such a plan was not generally possible, since these organizations were very busy with their own tasks which were expanded during the emergency and recovery period. Since the counterpart organizations of these international agencies were not generally available to distribute these goods, it was decided to utilize local indigenous organizations called "Patronatos." For various reasons these Patronatos were not generally used and a variety of local

leaders and organizations were employed. As will be discussed later there were several negative results from these choices.

STUDY AREA, POPULATIONS AND METHODOLOGY

Rather than trying to assess the total area where relief was given, we chose the rural areas of the La Ceiba region and the Aguan Valley. (See Map No. 1.) Essentially, we operated within one day's drive of La Ceiba. (See Map No. 2.) We interviewed varying numbers of persons in eleven villages in this area. In no way can we claim that the villages we chose for interviewing or the respondents were chosen randomly. We were armed with a list of villages that had received aid and the number of items distributed in each village.[1] (See Map 2.)

In order to determine the impact of the aid provided, we identified recipients of aid to be interviewed as well as non-recipients in the same locale. Of the 270 persons we interviewed, 176 indicated that they had received materials while 94 indicated they had not. Thus we feel confident that we interviewed in villages that had received emergency aid intended for small farmers and that the recipients clearly remembered the details of their assistance. In fact to recipients and non-recipients, Hurricane Fifi is a 'watershed' in their lives and they think in terms of before and after Fifi.

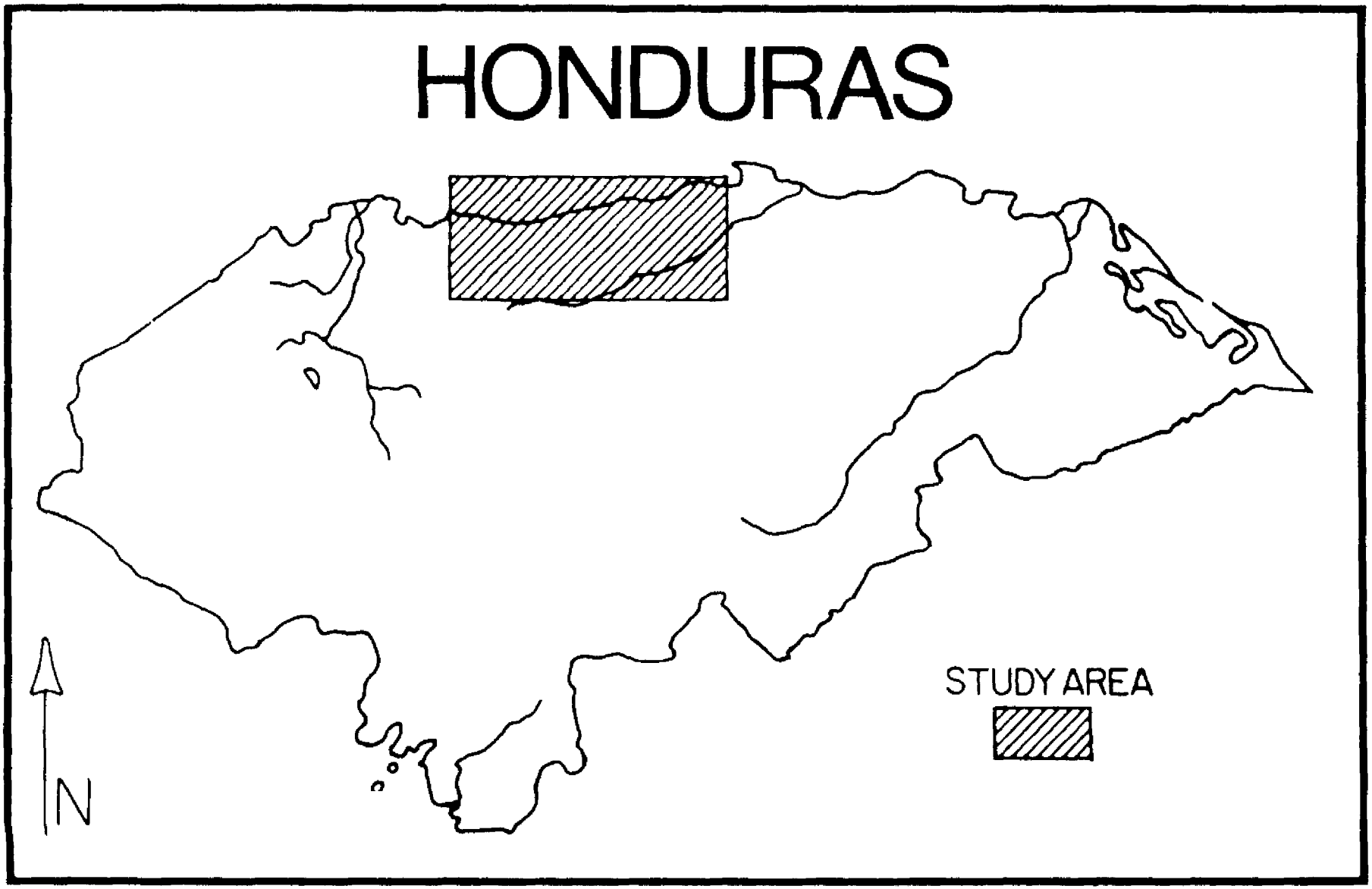
Unlike the above mentioned studies this research focuses on a rural, third-world region. Most of the inhabitants of this region are peasants struggling to survive without direct governmental assistance. Aside from some occasional 'bachelor-type goods" such as radios, wrist watches,

etc., (Lappe' and Collins,1978) their possessions include their house, some utensils and a few tools. Most roads are gravel and transportation is by foot or bus. What non-agricultural work that is available has been with Fruit Companies. Although prosperous in the past, the Fruit Companies have experienced economic difficulties in recent years. Beyond this, Honduras is considered one of the poorest nations in Latin America and has been designated as a "chronic food deficit country" by the FAO.

Of the 270 households interviewed 238 were headed by men while 32 were headed by women. Occupationally, 67.8% (180 were farmers, 18.2% (47) were employed in unskilled jobs (day labor, field work for banana companies, etc.), and 12.0% (31) were in skilled jobs, (brick layers, carpenters commercial positions etc.).[2] The average age of the household head was 43.5 and the average number of years of formal schooling was 1.9. The average number of persons per household was 6.0. Property damage was very high in this area due to Fifi but the loss of life was low. Over four-fifths of the respondents had their homes destroyed by the storm (83.5%) while less than four percent lost one of their family members.

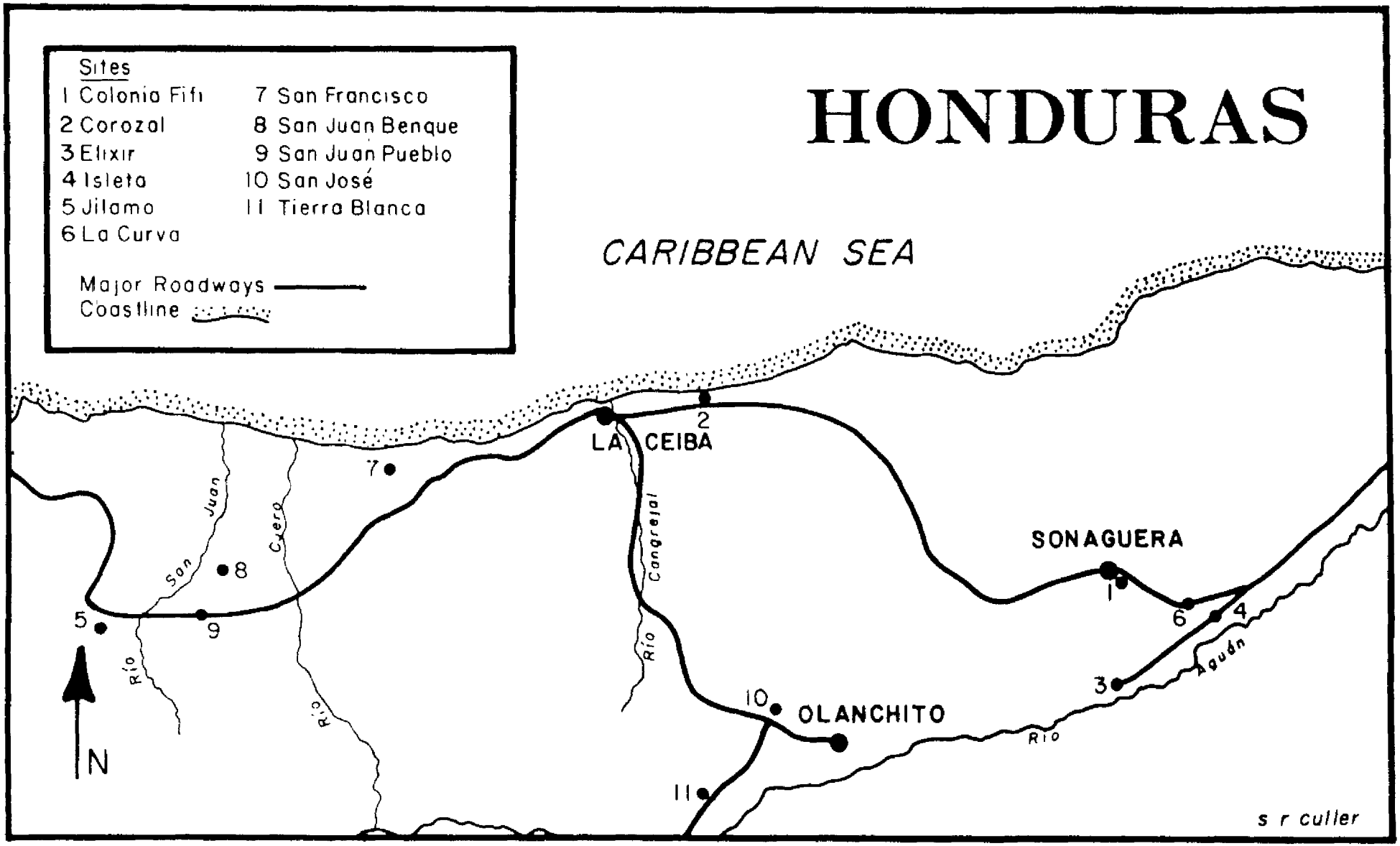
RECIPIENTS AND NON-RECIPIENTS OF AID COMPARED

As previously mentioned our sample contained both recipients and non-recipients of the aid distributed. In this section we will compare the two groups on a series of items not directly related to the aid they received. This will do three things with reference to our goal of measuring the impact of the aid program: 1) it will inform us as to the similarities and differences between the two non-random samples. 2) it will further enlighten us as to the conditions under which these people



MAP 1

MAP 2


Sites
1 Colonia Fifi
2 Corozal
3 Elixir
4 Isleta
5 Jilamo
6 La Curva
7 San Francisco
8 San Juan Benque
9 San Juan Pueblo
10 San José
11 Tierra Blanca
Major Roadways
Coastline
HONDURAS
CARIBBEAN SEA
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lived, and 3) it will add a dimension to our actual evaluation. To do this we asked the respondents a series of questions concerning their houses and their characteristics before and after Hurricane Fifi. Specifically, we asked of what materials their houses were constructed the floor materials, whether or not they had electricity, running water and whether or not they had added space to their living quarters. It might be mentioned at this time that numerous persons indicated that they had received the aid we mentioned, but that they had to pay for it. Generally the amount of money they paid was small so we have incorporated these persons into the category of receiving aid.

On the topic of housing and flooring materials we have distinguished between traditional and modern. In no way do we intend to imply that modern is better or more desirable or that traditional is inferior or unacceptable. We are simply using these terms to differentiate between materials that are indigenous and those that are manufactured utilizing capital intensive technology. Traditional housing material refers to tierra lodo, cana and brava, while modern refers to sawn lumber and cement block. Traditional flooring material is tierra and modern is sawn lumber or concrete.

As Table 1 indicates, there are generally very small differences between the recipients and non-recipients before or after the hurricane. House material was essentially the same for both groups before the storm (3.7% difference) and both became less traditional (utilizing modern materials) by approximately the same percentage (10.5% for recipients and 10.2% for non-recipients). Regarding floor material there was less than one percent difference before the storm, and recipients had 2.8% fewer traditional floors afterwards--a very

insignificant difference. Differences in electricity were 1.5% before Fifi (only 2.9% of the recipients had it and 4.4% of the non-recipients) and 1.3% after. Before the disaster almost twice as many non-recipients had running water (15.6% vs. 6.4%) but five years later the difference was reduced to 1.5%. Since the hurricane, recipients have increased the space in their house at a higher rate, 7.3%, than did the non-recipients.

On the four items that compare conditions before and after there is very little difference, and the improvement experienced by the two groups is also comparable, with a slight edge going to recipients in the area of running water (recipients started with fewer cases). Recipients were able to expand their housing space more than the non-recipients. None of these differences, however, are statistically significant.[3]

Table 1

HOUSING CHARACTERISTICS OF RECIPIENTS AND NON-RECIPIENTS: BEFORE AND AFTER HURRICANE FIFI

	Aid Recipients		Non- Recipients	
	Before	After	Before	After
House Material.				
Traditional	62.6%	52.1%	66.3%	55.1%
Modern	37.4%	48.0%	33.7%	44.9%
100% =	174	171	89	89
Floor Material.				
Traditional	77.6%	70.6%	77.5%	73.4%
Modern	22.4%	29.4%	22.5%	26.6%
100% =	174	160	89	94

Electric.				
Yes	2.9%	9.8%	4.4%	11.1%
No	97.1%	90.2%	95.6%	89.9%
100% =	174	174	91	90
Water:				
Yes	6.4%	39.7%	15.6%	38.2%
No	93.6%	60.4%	84.4%	61.8%
100% =	173	174	90	89

Larger House Since Fifi?		
Yes	32.6%	25.3%
No	67.4%	74.7%
100% =	172	79

RECIPIENT AND NON-RECIPIENT FARMERS COMPARED

Small farmers were targeted as the prime group to receive aid in this region. We use the term 'farmers' following the lead of relief agencies but the reader must be cautioned that they are not farmers in the same sense as U.S. farmers. These people either own, rent or use a few acres and generally use no more than hand tools to plant, cultivate and harvest. Not unexpectedly, numerous persons who were not farmers received some of the aid. Part of this can be explained by the fact that persons not identifying themselves as farmers actually raise some crops to supplement their income. Thirty-nine persons for instance, indicated that they were not farmers but did respond to the question relating to the current location of their agricultural land and stated that they are still raising crops. It is also possible that others

intended to farm after the hurricane, but could not and we do not doubt that some were simply desperate for help and indicated that they were farmers. We have, however, excluded these types of persons from this analysis and are only including persons who currently identify their occupation as farmer. Of the 270 interviewed, as previously mentioned 180 or 67.8% were farmers. This represents a decline of approximately eight percent when compared to before Fifi.

In order to explore the changes these farmers have experienced and to evaluate their situation before and after Fifi and between recipients and non-recipients we asked a number of questions related to their farming. (See Table 2.)

Table 2

FARMERS BEFORE AND AFTER HURRICANE FIFI

	Recipients	Non-Recipients	Total
Cultivate same land?			
Yes	47.3%	40.0%	44.9%
No	52.7%	60.0%	55.1%
100% =	112	55	167
How much land do you cultivate compared to before Fifi?			
More	13.4%	5.5%	10.5%
Less	38.4%	30.9%	37.4%
Same	48.2%	63.6%	52.1%
100% =	116	55	171
Did you sell agricultural products before Fifi?			
Yes	71.7%	63.6%	69.1%
No	28.3%	36.4%	31.0%
100% =	113	55	168

Do you sell agricultural products now?			
Yes	52.2%	43.6%	49.4%
No	47.8%	56.4%	50.6%
100% =	113	55	168
Do you produce now as much as before Fifi?			
Yes	17.8%	5.5%	13.7%
Less	44.3%	50.9%	46.4%
Same	38.1%	43.6%	39.9%
100% =	113	55	168

Before comparing the responses, however, it is interesting to note that both groups have experienced some dramatic changes in their farming. Less than half (44.9%) cultivate the same land. 37.4% cultivate less land (10.5% cultivate more) where 69.1% sold agricultural products before Fifi only 49.4% do now, and 46.4% state that they produce less now as compared to the pre-Fifi period. Comparing the two groups it seems that recipients had a rather consistent edge on the non-recipients both before the storm and after. More recipients cultivate the same land (7.3%), 7.9% cultivate more land (15.4% non-recipients cultivate less), 8.1% more sold agricultural products before the hurricane and 8.6% since, and 12.3% of the recipients produce more than they did prior to Fifi. The differences between the two groups are not however, statistically significant. It is reasonable to deduce that these differences between recipients and non-recipients can be accounted for in part by the somewhat advantaged situation the recipients had prior to the hurricane.

DISTRIBUTION AND USE OF AGRICULTURAL AID

In order to evaluate the use of the goods received and to determine its impact on post-Fifi farming we asked each recipient what particular items they received and what they continue to use. We found that the following items were distributed to the 176 recipients: 1) hand tools (hoes, machetes, etc.) were received by 111 persons, 2) seed corn by 68, 3) bean seeds by 44 persons, 4) vegetable seeds by 20, 5) rice by 18, and 6) insecticide by 18. In terms of the density of aid or the number of these items each person or family received it was distributed as follows: one item per recipient was given to 77 persons two items given to 42 persons three items to 32 persons, four items to 19 persons five items to five persons and six were given to only one recipient.

Table 3 contains a list of the materials received and currently used by all of the recipients as well as the percentage of those still in use. Tools are being utilized at a higher rate than the other materials followed by insecticides, vegetables corn, beans and rice. Although

Table 3

TOTAL MATERIALS RECEIVED AND CURRENTLY IN USE

	Received	Still Utilized	Percent
Tools	111	73	65.8%
Corn (seeds)	68	25	36.8%
Beans (seeds)	44	15	34.1%
Vegetables (seeds)	20	8	40.0%
Rice (seeds)	18	4	22.2%
Insecticide	18	10	55.6%

we lack comparable data one might expect greater continued use. Traditionally, rice has not been widely grown by small farmers in this area and its low continued usage is not too surprising. Several persons volunteered to the interviewers that the beans they received were not good (mostly molded) and that would account for the low percentage there. Corn is the staple among these people and its diminishing usage is undoubtedly related to some of it having been a hybrid and thus not capable of continued use. Insecticide is costly and probably a rare commodity among these people and its continued use may mean it is used with great care.

The utilization pattern becomes clearer however, when we separate the recipients into farmers and non-farmers. Table 4 makes this comparison and it is clear that with the exception of insecticides farmers make better use of this aid than non-farmers--as one would expect.

Table 4

MATERIALS RECEIVED AND CURRENTLY USED
BY FARMERS AND NON-FARMERS

	Farmers			Non-Farmers		
	Received	Used	Percent	Received	Used	Percent
Tools	69	58	84.1%	42	15	35.7%
Corn	58	24	41.4%	10	1	10.0%
Beans	38	14	37.0%	6	1	16.7%
Vegetables	17	8	47.1%	3	0	0.0%
Rice	15	4	26.7%	3	0	0.0%
Insecticide	15	8	53.3%	3	2	66.7%

Another way of looking at the impact of the aid is to ask the recipients to compare their financial situation before and after Fifi.

Table 5 compares recipient and non-recipient farmers as to whether their financial situation is Better, the Same or Worse. Although not statistically different, the recipients have improved at a higher rate or, more accurately, their plight has not deteriorated to the same extent as the non-recipients.

Finally, we can look at the impact of the density of aid on the self-reported, financial situation of recipient farmers. Table 6 presents this data and it appears that no change takes place with from one to three items received, but that a slight improvement is registered with four items and significant change with five or six (but the numbers here are very small).

Table 5

FINANCIAL SITUATION OF RECIPIENTS AND NON-RECIPIENT FARMERS BEFORE AND AFTER HURRICANE FIFI

Financial Situation	Aid Recipients	Non-Recipients
Better	31.0%	15.5%
Equal	27.4%	37.9%
Worse	41.6%	46.6%
100% =	113	58

One might deduct that an important change is made with increased aid, and the differences are statistically significant but there are other dynamics operating therein. For example, five of the six respondents who received five or six items are from the one village where a strong Patronato was operating and additional aid was also received in recent years. This aid is probably the result of an agrarian reform plan in Honduras that supports cooperative ventures. (Parsons, 1978)

Table 6

FINANCIAL SITUATION OF RECIPIENTS AND THE DENSITY OF AID

Financial Situation	Number of materials received: One	Two	Three	Four	Five/Six
Better	28.0%	26.8%	25.8%	36.8%	100.0%
Equal	36.0%	19.5%	35.5%	26.3%	0.0%
Worse	36.0%	53.7%	38.7%	36.8%	0.0%
100% =	75	41	31	19	6

NON-AGRICULTURAL AID

Lamina (4' x 8' sheets of corregated tin) was received by 98 families and after five years 95% are still using it. (There is no difference between farmers and non-farmers regarding this material.) Before Hurricane Fifi 56.0% of the recipients of aid had roofs made of traditional materials (manaca or teja) and 52.8% of the non-recipients had traditional roofs. Five years after the storm only 16.2% of the recipients and 32.6% of the non-recipients have roofs of traditional materials. Differences between recipients and non-recipients with reference to traditional roofing material before and after Fifi are statistically significant. (Non-traditional roofing material is either the lamina or sawn lumber with a covering of some type, but there are fewer than five cases of the latter so lamina constitutes non-traditional or modern roofing in this discussion.) Much of this difference between the two groups can be attributed to the aid but when asked, a total of 97 persons stated that they had purchased lamina since the hurricane and of these, 69.5% had not received lamina as a part of aid.

Lamina is a much desired material and probably the most valued item distributed. Of the 238 families that responded to our question related

to preferred roof material all but two indicated that they do prefer lamina The two who preferred other materials had roofs of wood at some time. Lamina was preferred primarily because it is more durable, but others stated that there was no palm available after the hurricane that the lamina does not catch fire and that snakes and bugs live in the indigenous materials. When asked in an open ended question 'of the materials received what was particularly useful ' 38.2% mentioned lamina first followed by 21.8% who stated tools. 19.4% for seeds 13.5% food. 4.1% clothes, and 2.9% said everything.

EVALUATION OF AID DISTRIBUTION

Soon after our interview began it became evident that both recipients and non-recipients were very anxious to comment on the manner in which the aid was distributed. We did not initially elicit these comments, but found early that most respondents would raise the issue since it was foremost in their minds when the recovery period was mentioned. Initially we did not systematically record these comments however we soon decided it was necessary. Following this decision each respondent was asked to evaluate the distribution process. In the recorded responses to this open-ended question we were able to categorize the 170 respondents into the following general evaluative classes: 1) the distribution was good or fair 2) the distribution was acceptable and 3) distribution of the materials was bad or unfair. Aside from not questioning our entire group we found that some preferred not to respond due to the sensitivity of the question and a fear of retribution if found out. A few others stated that they had no particular opinion and a few stated that they were sick and unable to participate in the program.

Of the 170, 38 (22.4%) indicated that the distribution was good or fair 30 (17.7%) that it was acceptable, and 102 (60.0%) felt it was bad or unfair. Of these respondents 124 (72.9%) were recipients of aid and 46 (27.1%) were non-recipients. Of the recipients, 37 (29.8%) felt the distribution was good, 26 (21.0%) indicated it was acceptable and 61 (49.2%) viewed it as bad or unfair. Predictably, non-recipients felt the distribution less fair. Only one indicated it was good (2.2%), four (8.7%) that it was acceptable and 41 (89.1%) that it was bad or unfair.

Aside from the general evaluation reported above respondents cited specific complaints they had with the distribution process. The most cited complaint was that either those distributing the goods kept the more desirable items or did not distribute anything. (Reports of such behavior are common in this part of the world. (Parsons.1978 Seligson 1978) Seventy persons mention this and of this number 39 (55.7%) were recipients of the aid themselves. The second most mentioned complaint was that either the poor did not get the materials or that the rich (those not in need) received them. Sixty-two persons mentioned this and of this number 19 (30.7%) were recipients. A total of 29 persons complained that recipients had to pay for the materials and 17 of these persons were recipients themselves (58.6%). Twenty-three respondents (5 or 21.7% recipients) observed that either they simply did not ask for the aid or they refused to ask for such. The fact that five of those mentioning this also answered that they received aid either means that they received it anyway or that they were complaining about what was happening to others. Twelve persons mentioned that there was not sufficient material to distribute to the needy (66.7% were

recipients) and seven stated that only the ones who complained loudest received the aid (of these 42.9% were recipients).

One would be tempted to dismiss these complaints if they were only from the non-recipients, but it is evident from the above that this is not so. Although nearly all of the non-recipients were dissatisfied with the distribution practices, nearly half of the recipients were also dissatisfied. Another reason for believing the reports is that they were independently substantiated by numerous persons in the same villages. In many villages we have details from several persons, recipients and non-recipients of the person or persons who were to distribute the materials, but instead sold them and left the community (one moving to La Ceiba and another to the United States) or kept the materials for their own use. Some were reported as still having materials. In fact in only one village did we encounter an organization that approximates the ideal Patronato system. This Patronato involved a working co-op of rather young men who had received additional aid from other sources and who were apparently succeeding agriculturally and financially.

CONCLUSION

Assessing the impact of aid after five years with limited base data or other controls is a very difficult task. However, we feel it is a necessary and justifiable undertaking and one that can identify strengths and weaknesses that cannot otherwise be observed. Aid to disaster victims during the recovery period is a difficult task under the best of conditions. With limited communication and transportation facilities available and a national government of limited resources the task is exacerbated even more. It was under these conditions that aid was distributed to a large number of small farmers in the areas of La Ceiba and the Aguan Valley of Honduras.

We approached the task of assessment by interviewing recipients and non-recipients of aid in villages we knew had received aid this fact was substantiated by the respondents. Although we chose non random samples of respondents from what we considered to be representative villages we did find that the two groups shared many characteristics. Recipient and non-recipient farmers also were quite similar, but recipients seemed to have some advantages both before Fifi and after. Both groups of farmers had experienced several problems related to their farming due to the hurricane and its effects. Comparing recipient farmers and non-farmers, we found that the aid given to the farmers was put to more extended use. Although non-farmers were not supposed to receive said aid, there are numerous reasons why this probably happened.

We were surprised to find that most recipients received only one or two types of aid. Perhaps this can be accounted for by the greater than anticipated number of persons affected by the storm. Although those receiving more materials fared better five years later, the difference can essentially be accounted for in one village--where a very active Patronato was operating--which has received a great deal of additional, outside assistance.

Since both recipients and non-recipients were anxious to discuss their complaints about the distribution system, we questioned a large number on this topic with an open-ended question. We found that nearly half of the total group felt the process bad or unfair and that a large minority of recipients shared this belief. Their complaints were centered around those in charge of distribution who reportedly kept sold or selectively distributed the materials. Although we would normally be skeptical of such post-facto complaints we took them quite seriously since they came from recipients and non recipients alike.

We found that large numbers of both recipients and non recipients have serious problems five years after Fifi. Only 30% of the recipients and 19.1% of the non-recipients are better off financially while 30% and 36% are in about the same financial situation as before Fifi, and 40% and 44.9% are worse off now. (The differences are not statistically significant.) But again, we must mention that over 40% of the recipients who reported that they are better off financially were residents in the one village with a strong Patronato, and large amounts of aid from other sources. With this advantaged group is deleted the differences are negligible.

Why does an apparently well conceived program to assist small farmers after a major storm not find measurable differences between recipients and non-recipients five years later? And, why do nearly 50% of the respondents (both recipients and non-recipients) consider the distribution of goods unfair or bad? From our investigation and observations we feel the answer to this question lies in a number of circumstances essentially beyond the control of relief agencies. These circumstances are: 1) a greater need than expected 2) counterpart agencies generally unable to assist in the distribution process and subsequently a poor choice of distributing agents. 3) far greater long-term damage from the hurricane, and 4) the movement of the Fruit Companies to more profitable areas.

Relief agencies miscalculated the number of families affected by the storm. These miscalculations resulted in the "thin" distribution of materials and subsequently, a situation wherein recipients are virtually indistinguishable from non-recipients with reference to economic and social well being five years later.

The earlier mentioned distribution plan called for the use of local counterpart organizations to distribute the goods to small farmers in need. These established agencies were generally too busy with their own relief and recovery efforts. Since this approach was impossible, serious staffing and distribution problems were encountered. According to respondents the reported corruption and maldistribution of the goods can generally be considered the result of an inappropriate choice of persons to act in this capacity.

The hurricane also caused major flooding and the deterioration or removal of the top soil in many areas. The results of this is clearly reflected in the agricultural production of the recipients and non-recipients when they are compared before and after Fifi. This situation is an obvious contributor to the declining financial status that the respondents experienced.

Coupled with this latter factor was the decision by the Fruit Companies to alter and/or move some of their operations. This contributed to the loss of jobs and markets for the local residents and the subsequent deterioration of their living conditions reflected in this study. Many factors contribute to decisions by such transnational corporations to move, but the decision is often devastating to the local and/or regional economy.

It must not be assumed that all efforts to assist after Hurricane Fifi met with difficulties or failure. Other research by the authors on the north coast of Honduras in the Sula Valley found very positive results. When the recipients of that aid were surveyed to assess their situation three years after the disaster the response was overwhelmingly positive. (Snarr & Brown, 1980)

NOTES

[1]Both researchers were in the field as the research took place, but we relied heavily upon a graduate student in Rural Sociology at Ohio State University who was from the north coast of Honduras to direct and train the local interviewers. The interviewers were from the immediate area and had completed no more than a high school degree. In addition to the three-page interviews the graduate student conducted several in-depth interviews lasting from thirty minutes to an hour.

[2]If the numbers do not add to the total respondents (270) it is due to an incomplete response rate.

[3]Chi-square is a statistic used to determine if differences between numbers are significant. Differences are considered significant if they are ___.05.

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VILLAGE DESCRIPTIONS

Corozal is located on the coast east of the city of La Ceiba and two miles off the main highway. Much of the village is adjacent to the beach and fishing was an important economic activity. Prior to Fifi all families interviewed were housed in traditional structures. Today 37 percent have a modern structure in at least one aspect (floor, roofing, housing material). Only 44 percent received aid and only half of those receiving aid received more than two items. Of those interviewed 22 percent said they were 'better off' financially while 56 percent answered that their financial situation was unchanged.

Elixir is located in the basin of the Rio Aguan approximately 25 kilometers southwest of the town of Isleta. Only in the material used in roofing was there a change in the house materials. Those having "modern" roofing increased from 47 percent to 78 percent. Thirty-four percent stated they had received aid and 80 percent of those receiving aid received only one item. Forty percent reported they were worse off financially now while 20 percent considered their situation better.

Colonia Fifi is located at the edge of the village of Sonagura and was built" specifically for victims of Fifi. A limited water supply and poor soil make this an inadequate site for a project. The only significant improvement in housing was in the type of roofing material. Pre-Fifi 35 percent had modern roofing. This percentage increased to 79 after Fifi.

Seventy-one percent received aid and of those 70 percent received only one item. Only 28.2 percent of those interviewed considered themselves better off--while 34.6 thought they were worse off financially.

Curva is located on the primary road between Isleta and Sonaguera. With the exception of roofing material those interviewed were more poorly housed after Fifi than prior to the storm. No change was recorded from the equal percentage with modern roofing, while in house materials the modern category percentage dropped from 25 to 0. The drop in modern flooring percentages was not so steep being from 41 to 33. Fifty percent said they received aid, none received more than two items and 90 percent received only one item. Of those interviewed 54.5 percent indicated they were worse off now. Strong complaints were made about the distribution system with references to lamina being diverted for sale and for a church.

Isleta is a former Standard Fruit Company town which the government has appropriated. The persons receiving aid were at the fringe of the former company town. They were all in completely traditional housing and had been prior to Fifi. These people did not receive lamina as it was designated for Colonia Fifi. Aid was received by 66 percent and 75 percent of those received three items. Fifty percent said they were in better financial shape while 33 percent said they were now in worse condition.

Jilamo is south of the Tela-LaCeiba highway about eight kilometers and has two distinct sections. The one nearest the road is all modern housing in a "project" siting of rectangular lots and "streets."

Slightly more than half those interviewed had traditional housing materials prior to Fifi while now only 28 percent are so housed. Roofing material had an even more pronounced shift moving from 60 to 9 percent with traditional materials. Aid was received by 77 percent and 55 percent received more than two items. Only 21 percent thought they were worse off and 50 percent answered they were in better financial condition.

San Francisco is approximately ten kilometers north of the Tela-La Ceiba road about half the distance to the coast. Sixty-seven percent were housed in modern dwellings prior to Fifi with the only significant change being in the area of roofing material. From slightly over half, the percentage after Fifi was only 15 percent with traditional roofing material. Aid was received by almost half (47 percent) and of those receiving aid 38 percent received more than two items. Fifty-four percent of those interviewed said they were worse off while only 15 percent thought their financial situation was improved.

San Jose is a very small village mid-way between Olanchita and Tierra Blanca in the valley of the Rio Aguan. With the exception of roofing, little change was experienced in housing materials. Prior to Fifi 62 percent had modern material while after Fifi the figure was 100 percent. Aid was received by 78 percent but none of these received more than two items. Second only to Tierra Blanca the residents here felt they were worse off financially, with 63 percent so responding.

San Juan Benke is located on the coastal plain about 8 kilometers from San Juan Pueblo and to the north of the Tela-La Ceiba highway. The most

significant change in housing was the improvement in roofing material where the percentage classified modern reversed after Fifi. Thirty percent had such material pre-Fifi, and now 70 percent of the houses are so roofed. Seventy percent said they received aid while only 19 percent of those received more than two items. Concerning their financial situations, 39 percent said they were worse off and 13 percent responded that it was now better. The larger proportion didn't perceive a change.

San Juan Pueblo is located within the coastal plain directly on the Tela-La Ceiba highway which divides the settlement into two parts. Housing materials have improved for many of the S. J. Pueblo residents. Prior to Fifi the percentage classified as "modern" was 43 and now it is sixty-four. Roofing had a similar change. While pre-Fifi the modern category was 44 percent, it is now sixty-five. Aid was received by 69 percent of those interviewed and 26 percent received more than two items. Forty-three percent responded that they were worse off financially and exactly half that amount siad they were now in a better financial position.

Tierra Blanca is within the valley of the Rio Aquan and directly adjacent to Standard Fruit Company banana lands. It occupies land donated by the company. Prior to Fifi only 8 percent had house materials classified as modern while 30 percent had such roofing materials. Post-Fifi none had modern house materials but all had modern roofing. Aid was received by 85 percent. However, only 5 percent received more than two items. Concerning its financial situation this site had the highest percentage (72) of people who were now financially less well off than before Fifi.