AN ASSESSMENT OF THE SUPPLY AND DEMAND FOR BASIC STAPLES IN POST MITCH HONDURAS AND ITS IMPLICATIONS FOR FOOD ASSISTANCE DURING THE REMAINDER OF THE 1998/99 AGRICULTURAL YEAR

A Report Prepared for USAID/Honduras

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PRODUCTION OF BASIC GRAINS

Corn is the most important of the basic grains from a production standpoint. Honduras produces substantially more corn than sorghum or rice. For the last five years (1993/1994 to 1997/98), Honduras has produced 579 thousand metric tons of white corn on average, 67 thousand metric tons of beans, 28 thousand metric tons of paddy rice, and 65 thousand metric tons of sorghum (see Table 1). No wheat is produced in Honduras, and all wheat is imported.

Corn and beans are grown throughout the country, mostly by small farmers. Rice and sorghum production are more localized. Rice production is concentrated in the central area of the country in Cortez, Comayagua, Olancho and Yoro, and sorghum production is concentrated in Olancho and in the southern and southwestern area of the country in Choluteca, El Paraiso and Lempira. Corn is also the most important crop from the standpoint of the number of farms that produce the product. According to the 1992/93 Census, corn was produced on approximately 268 thousand farms, beans on approximately 114 thousand farms, sorghum on approximately 50 thousand farms and rice on approximately 20 thousand farms.

All three basic grains plus beans are grown during two agricultural seasons. In a normal weather year, planting of the first crop begins in late April or May, with the arrival of the first season rains (usually from May to October) and finishes in June or July. Harvesting of the first season grain crops, mainly corn, takes place between August and September, but could stretch for another two months, largely depending on the varieties of corn used, the region and the time of planting. Harvesting of beans also takes place between August and September.

Planting for the second season crop, also know as the "postreria" starts in August and September and finishes in October and November. Harvesting of all cereals, including beans, normally starts in November and December and extends, in the case of corn, for an additional two month period. Again, the actual timing depends on the varieties used and the actual time of planting in the specific region of the country.

The majority of the grain harvested in the country is produced during the first season. Over 80 percent of the corn is produced during the first season, 80 percent of the rice and 60 percent of the sorghum Beans are different with 65 to 75 percent produced during the second season

THE IMPACT OF HURRICANE MITCH ON BASIC GRAIN PRODUCTION

Until Hurricane Mitch entered Honduras at the end of October, 1998 was expected to be a better year for the agricultural sector than 1997. Yields and output were lower than average in 1997 due to the prolonged and harsh dry season brought on by the tail-end effects of El Nino. Production of banana and coffee, the two major export products, were expected to be higher in 1998 than in 1997. Production of basic grains, with the exception of rice, was also expected to be higher in 1998 as a result of the more generous rainfall earlier in the year -- higher than 1997 and higher than the five year average (see Table 1)

Table 1: Production of Basic Grains: Five Year Average and Pre Mitch Estimates for 1998/99 (September 1998 to August 1999) (Metric Tons)

	Five Year Average (1993/94 to 1997/98)			Pre Mitch Estimates		
	First Crop	Second Crop	Total	First Crop	Second Crop*	Total
Corn	485,435	93,970	579,405	531,715	93,970	602,466
Beans	16,486	50,373	66,859	24,712	50,373	94,946
Rice	22,183	6,229	28,412	16,325	6,229	25,306
Sorghum	35,318	29,992	65,310	49,673	29,992	93,993

* Five year average is used as the estimate for the second crop

SOURCE: Office of Statistics and Census, Department of Commerce and Industry, various reports on the results of their survey of basic grains production, including the most recent February 1999 report.

The first assessment of damages to the agricultural sector, which was carried out by the Government of Honduras just after the passage of the Hurricane, suggested that losses were very high, with field crop losses provisionally estimated as much as 80 percent. These initial estimates of losses and the number of deaths turned out to be too high, as often occurs in this kind of disaster, and later estimates have been lower. The estimates of losses of export crops and livestock were obtained from private sector professional associations. Estimating the losses in basic grains was more complicated, because their production is more widely distributed throughout the country.

A second set of estimates were developed by a team of consultants fielded by the Food and Agricultural Organization (FAO) of the United Nations. This group visited the major grain producing areas in Honduras in late November and early December of 1998 to assess the percentage of production losses anticipated as a result of Hurricane Mitch, both to the harvest of the first crop and the planting of the second crop.

A third set of estimates is now available based on the results of the Statistics Office's semi-annual survey of basic grains production which was in the field in late December 1998 and early January 1999. These estimates suggest that the losses in corn and beans are less than the earlier estimates, including the FAO estimates, and that the losses in rice and sorghum are greater (see Tables 2 and 3). The purpose of this survey, which is conducted annually, is to validate the production from the first crop and assess farmers' planting intentions and expectations for the second crop. By the time this survey, which was delayed by Mitch, actually got into the field, the fields had already been planted and the crops were growing. This means that the results of

this survey are likely to more rather than less accurate than normal.

Table 2: Comparison of FAO and GOH Survey-Based Post Mitch Estimates of Basic Grains Production for 1998/99 (September 1998 to August 1999)(000 Metric Tons)

	FAO Estimate			GOH Survey-Based Estimate		
	First Crop	Second Crop	Total	First Crop	Second Crop	Total
Corn	378	33	411	399	105	504
Beans	36	25	61	24	40	64
Rice	NA	NA	18	9	4	13
Sorghum	NA	NA	85	34	37	71

SOURCES: The Special Report produced by the FAO/WFP Crop and Food Supply Assessment Mission to Honduras, January 29, 1999 and the February 1999 Report by the Office of Statistics and Census, Department of Commerce and Industry on the results of their survey of basic grains production

Corn

When the hurricane struck, part of the first season corn crop was still in the ground and most of the planting of the second crop had already taken place. Planting of the first season crop had been delayed due to the late arrival of the rainy season due to the tail-end effects of El Nino. This delay pushed the planting of the first season crop until July, close to the time when the second crop would normally be planted (i.e., August and September). As a result, the second crop was also planted late, with actual planting not starting until the end of September or beginning of October. Therefore, by the time the hurricane hit the country at the end of October, the bulk of the first crop already had been harvested and most of the second crop had just been planted.

The FAO Mission estimated that only 411 thousand metric tons of corn would be available from domestic production in 1998/99 as a result of Mitch or about a third less than is produced in a normal production year. The FAO team recognized that some corn planting continued after the hurricane in those areas which usually sow their second crop in November/December but concluded that the amount planted was heavily reduced because of the impact of the hurricane. The FAO team also concluded that many farmers, especially those located close to river banks were unable to replant, because their lands were still flooded and/or covered with thick layers of sand and silt. What the FAO team was unable to pick up, because the program was just initiated at the time they were in the field, was the impact of the emergency program that the

Ministry of Agriculture and Livestock undertook to encourage farmers to increase the second planting of corn.

Table 3: Comparison of FAO Estimates of Crop Losses for 1998/99 (September 1998 to August 1999) with Estimates Based on the GOH's Recent Survey of Basic Grains Production

	FAO Estimates of Losses		Survey-Based Estimates of Losses	
	Quantity (000 Metric Tons)	Percent	Quantity (000 Metric Tons)	Percent
Corn	200	33	122	20
Beans	35	37	10	11
Rice	8	31	10	38
Sorghum	10	10	9	9

SOURCES: The Special Report produced by the FAO/WFP Crop and Food Supply Assessment Mission to Honduras, January 29, 1999 and the February 1999 Report by the Office of Statistics and Census, Department of Commerce and Industry on the results of their survey of basic grains production

The most recent estimate, which is based on the Government's survey of corn producers, indicates that almost 504 thousand metric tons of corn will be available from domestic production in 1998/99. This is a loss, but only a 122 thousand metric tons loss (or 20 percent) compared to the FAO estimated loss of 200 thousand metric tons. According to the Government's survey, the first crop was short by almost 133 thousand metric tons. But some of this shortfall will be made up by a much better than average second crop. Based on the reported area planted and current condition, the second crop is expected to yield 105 thousand metric tons compared to a 94 thousand metric ton average for the second crop over the last five years.

Beans

The great majority of the first season bean crop was already harvested by the time the hurricane hit, so no sizable losses were expected. Major losses, however, were expected from the more important second harvest, since Hurricane Mitch struck right after many of the fields had just been planted and bean plants are weak and do not resist extreme conditions well. Major losses were expected in the high elevation areas, in particular, due to the high winds and heavy rains.

The FAO team expected that the percentage of losses for beans would be higher than for corn. On the other hand, the team also expected that some of these losses would be offset by farmers

replanting after the hurricane. The FAO team estimated, therefore, that bean production would only reach 61 thousand metric tons instead of the 95 thousand metric tons that were estimated prior to Mitch (equivalent to a 36 percent loss).

The results from the Government's survey indicate, on the other hand, that over 64 thousand metric tons of beans will be available from domestic production in 1998/99. This is a loss, but only a 10 thousand metric tons loss (or 11 percent) compared to the FAO estimated loss of 35 thousand metric tons.

Rice

The initial estimates of losses in rice production were made by the Ministry of Agriculture and Livestock based on information from associations of rice producers, and the FAO team used these estimates. The Ministry expected that rice production would fall to 18 thousand metric tons of milled rice. Most of the losses occurred in the northern part of the country, where rice producers now face a serious problem of land rehabilitation.

The results of the Government's survey indicate that less than 13 thousand metric tons of rice are likely to become available from domestic production. This represents a loss of 10 thousand metric tons (or 38 percent) instead of the earlier estimate of a 8 thousand metric ton (or 31 percent) loss. Rice production has been very erratic with production levels in the 1990s, on average, significantly lower than in the 1980s.

Sorghum

Sorghum was less damaged, because the plant is more resistant to adverse weather conditions. For this reason, the FAO mission estimated that about 19 thousand metric tons were lost, which represented about 20 percent of the expected output before Mitch. However, the team also recognized that substantial replanting of sorghum took place after Mitch, and expected that this additional production would compensate for part of the losses. Therefore, FAO expected a net loss of only 10 thousand metric tons (10 percent) for the 1998/99 agricultural year.

The Government survey confirmed that there was a loss in the first season crop (16 thousand metric tons), but indicates that the second season crop will be considerably above average (over 7 thousand metric tons). Based on these latter estimates, the sorghum crop should reach 71 thousand metric tons for the year. This represents a net loss in the sorghum crop of 9 thousand metric tons (or 9 percent), which is only slightly less than the FAO estimate.

IMPLICATIONS OF THE CROP LOSSES FOR COMMERCIAL IMPORTS AND FOOD AID NEEDS FOR THE CURRENT AGRICULTURAL YEAR (1998/99)

The crop losses caused by Mitch could have serious implications for the food supply/demand balance for the Honduras for the remainder of the 1998/99 agricultural year and for succeeding

years, depending on how long it takes to rehabilitate the affected areas of the country. Honduras is a food delict country even in years of normal production with substantial quantities of corn, rice and sorghum imported to supplement domestic production. All the wheat consumed is imported. In 1997, the country imported over 300 thousand metric tons of corn, beans, rice and wheat, compared to a five year average of approximately 182 thousand metric tons of these same products (see table 4).

The international community responded quickly to the perceived food needs of the country in the aftermath of Mitch. The first concern was to get enough food to people in immediate need, people who lost their food supplies, for example, as a result of the hurricane. Donors were also

Table 4: Imports of Basic Grains (Metric Tons)

Product	Five Year Average (1993-1997)			1997		
	Commercial	Donations	Total	Commercial	Donations	Total
Corn	57,666	7,514	65,180	110,461	9,385	119,846
Beans*	7,824	1,223	9,047	19,320	1,138	20,458
Rice	27,771	1,282	29,053	38,489	0	38,489
Wheat	137,751	41,049	178,800	167,355	9,176	176,531

* The average for beans is only for four years (1993 to 1996) and the single import year is 1996 instead of 1997.

SOURCE: Department of Economic Studies, Honduras Central Bank

concerned about the need to insure that sufficient supplies of basic foods remained in the market so that food prices wouldn't increase dramatically thereby pricing other people who still had jobs and income out of the market. The United States alone has pledged to make over 210 thousand metric tons of corn, beans, rice and wheat available to Honduras during the 1998/99 agricultural year.

Since the agricultural sector is still an extremely important component of the Honduran economy and many of the commodities that are being donated are produced locally, donors also need to be concerned that their food assistance does not create disincentives to domestic production and markets. One reason to be concerned about the possibility that there could be too much food assistance coming into the country is the fact that the initial pledges of food assistance were made in response to estimates of losses that were higher than the more recent survey-based estimates. A second reason is that the wholesale market price for corn is lower now (in January and February 1999) than it has been at this time of year during the previous four years (see Figure 1). The price of beans is also significantly lower than at this time in 1997 but slightly

higher than in 1996 and 1998 (see Figure 2). The fact that the prices for these two commodities are relatively low suggests that the supplies of these two commodities are adequate given their demand and is inconsistent with a conclusion that there is a shortages of these two commodities in the country. The low prices for corn, in fact, suggest that there might be more than adequate supplies in the country or the expectations of more than adequate supplies in the near future.

Assessing Demand in 1998/99

To understand how much more the country will have to import this year in order to make up for any shortfall caused by Mitch one also has to understand the demand side of the equation -- how much of the product is likely to be consumed by humans and by animals, how much will be used for seeds, how much will be lost, and how much of the product was in stock in the beginning of the year and how much is likely to be left in stock at the end of the year.

In reality, the estimates of the pieces that go into the demand side of the supply/demand calculations are much less precise in Honduras than the estimates of the amount of supply of these products available from domestic production. For example, different groups -- the Ministry of Agriculture and Livestock, FAO, the U.S. Department of Agriculture -- use very different estimates of the demand for human consumption for some of these products. The GOH, for example, is still basing its estimates of human consumption on the results of a 1987 household consumption/nutrition survey. These estimates are very different, in some cases, than the estimates that one would get using data from the more recent National Household Consumption, Income, Expenditure and Nutrition Survey that was conducted in 1993/94 (see Table 5). Theses latter estimates not only are more current, but they are also based on data from a survey that was conducted over an entire year rather than just at one point in time and on data collected during four visits to households rather than just one visit.

The GOH estimates and the estimates based on the 1993/94 household survey assume that there will be no changes in the normal consumption patterns as a result of Hurricane Mitch. However, demand for specific commodities could change if the availability of other commodities also changes. For example, there were major losses in the commercial production of bananas and plantains in the northern part of the country. And, the FAO team has estimated that the demand for corn and sorghum will be higher this year because people will have to look for substitutes for the bananas and plantains that were normally a part of their diet

Corn and sorghum are also used for animal feed. White corn, which constitutes the bulk of the corn that is produced domestically, is primarily consumed by humans in the form of "tortillas." A small amount of yellow corn is also grown locally and used for animal feed. A considerable amount of yellow corn is imported each year and also used for animal feed.

The demand for corn and sorghum for animal feed may also change as a result of other changes that have occurred as a result of Hurricane Mitch. The demand for corn for poultry feed is not likely to change, at least in the short-run, because the commercial poultry sector was not damaged by the hurricane. However, the demand for livestock feed could increase as a result

of the Mitch-induced loss of pastures, at least in the short-term. In the longer-term, as farmers have to slaughter their cattle, because they cannot afford to feed them, the demand for corn and sorghum for livestock feed may drop off again. The changes in the quantity and price of beef

Table 5: A Comparison of Alternative Estimates of Per Capita and Total Human Consumption of Basic Grains and Beans

Product	Per Capita Human Consumption (kgs/year)			Total Human Consumption (000 metric tons/year)		
	GOH Estimates	FAO Team Estimates	Estimates Based on the 1993/94 Household Survey	GOH Estimates	FAO Team Estimates	Estimates Based on the 1993/94 Household Survey
Corn	61.7	75.6	71.5	370	453	429
Beans	9.1	12.5	13.6	54	75	82
Rice	8.6	10.8	15.5	52	65	93
Sorghum	6.5	6.7	6.2	39	40	37
Wheat	NA	23.0	15.7	NA	138	94

SOURCES: GOH estimates were taken from an un-published table dated 2/17/99 prepared by the Ministry of Agriculture and Livestock; the FAO estimates were taken from the Special Report dated January 29, 1999 prepared by the FAO/WFP Crop and Food Supply Assessment Mission to Honduras; and the estimates based on the 1993/94 Household Survey were taken from a report on the "Determinants of Household Food Security in Honduras," dated November 1996 which was prepared by the Impact project for USAID/Honduras.

in the market could also lead to changes in the demand for poultry meat and thereby to changes in the demand for poultry feed.

Getting a good estimate of the amount of stocks that were in the country at the beginning of the agricultural year for each of these products is particularly difficult. FAO has included estimates of opening and closing stocks in their analysis, but they provide no information on the source of these estimates or on the methodology that they used to construct these stock numbers in the event that the team estimated them.

Supply and Demand Balances in 1998/99 and Import Needs

Corn

According to FAO estimates, Honduras will have to import 336 thousand metric tons of corn during the 1998/99 agricultural year. If one does the analysis of the supply and demand for corn without taking opening and closing stocks into account,[1] the FAO estimate of import requirements for the 1998/99 agricultural year would increase to 353 thousand metric tons (see Table 6).[2] This is much higher than the more recent Government estimate of 180 thousand metric tons. The FAO estimate is much larger, because FAO is assuming that less corn will be available from domestic production than the Government (the GOH's estimates are based on the results of its recent production survey) and that the demand for corn will be much higher than usual, particularly for human consumption. FAO's estimates of human consumption of corn actually contain an allowance to cover the expected increase in corn consumption due to the decrease in the availability of bananas and plantains. The Government's estimate of the demand for corn for human consumption is based on the information on the per capita consumption of corn derived from the 1987 household expenditure survey. Data from the more recent (1993/94) household survey suggests that corn consumption is higher than previously estimated (71.5 kilograms per person per year compared to 61.7 kilograms per person per year). If one uses the higher estimate of per capita consumption of corn, this translates into a total demand for corn for human consumption in the country of 429 thousand metric tons per year (compared to the Government's estimate of 370 thousand metric tons and FAO's estimate of 453 thousand metric

Table 6: A Comparison of Alternative Estimates of the Supply and Demand for Corn During the 1998/98 Agricultural Year (September 1998 to August 1999)(000 Metric Tons)

	FAO	GOH	Author
I. Domestic Supply	411	504	504
II. Utilization	764	684	743
Human Consumption	453	370	429
Animal Feed	249	246	246
Other Uses*	62	68	68
III. Import Requirements	353	180	239

* Includes quantities used for seed and expected losses

tons). If one uses the Government's estimates of production and this latter estimate of demand, the import requirement for corn would be around 239 thousand metric tons.

These three estimates of the potential import requirements for corn during the 1998/99

agricultural year -- 353 thousand metric tons, 180 thousand metric tons and 239 thousand metric tons -- need to be assessed in light of the likely size of commercial imports and the quantity of donated corn that has already been pledged. Commercial imports of corn were over 119 thousand metric tons in 1997 and averaged 65 thousand metric tons over the last five years. The FAO team estimated that commercial imports would be limited to 100 thousand metric tons during 1998/99 as a result of the anticipated shortages of foreign exchange due to the extensive damage that was done by Hurricane Mitch to the country's export crops and the enormous cost that will be involved in reconstruction of the affected infrastructure. And the IMF has estimated an unfinanced, balance of payments gap for Honduras for 1999 of as much as $250 to $300 million.

Nevertheless, say one accepts the FAO team's conclusion that only 100 thousand metric tons of corn will be imported commercially this year (1998/99) and one adds to this the amount of donated corn that has already been pledged by the U.S. government (which is over 100 thousand metric tons), according to FAO this will leave the country with a gap of 153 thousand metric tons that will still need to be covered with food assistance. However, if one uses the Government's estimate of the country's import requirements for corn, which is 180 thousand metric tons, and assumes that 100 thousand metric tons of corn will be imported commercially and the 105 thousand metric tons of corn donations pledged by the United States will also enter the country, the gap completely disappears. In fact, if this scenario is correct, there is likely to be an excess of corn in the country if the U.S. government completes the negotiations for the 65 thousand metric tons of corn that were to be made available under its Food for Progress Program with the Government of Honduras. This explains why the GOH recently decided to ask if USDA could provide 40 to 50 thousand metric tons of wheat under this program, instead of corn, and to make up the remainder in soy beans and/or soybean meal. On the other hand, if one assumes that the import requirement for corn is 239 thousand metric tons, which is based on a more realistic estimate of human consumption of corn in the country, and also assumes that 100 thousand metric tons of corn will be imported commercially and the over 105 thousand metric tons of corn donations pledged by the United States will also enter the country, there will still be a gap albeit only 34 thousand metric tons.

This analysis substantiates the need for caution with respect to corn donations and suggests that, even in the event that wheat is substituted for corn in USDA's Food for Progress Program, there will be the need to monitor the market for corn over the remainder of the 1998/99 year. The concern is with both the corn imported under the Title II emergency program, which is destined for human consumption, and the corn imported under USDA's Section 416 and Food for Progress program, which will be monetized and used for animal feed, because both are designed to fill the gap in supply that was created by the hurricane. The 828 metric tons of corn that is being imported by CARE under its regular Title II program, however, is a different case. This corn is being used in an area of the country that was not affected very much by the Hurricane and is being distributed in a manner designed to add to the demand for corn in the country rather than to fill a gap in supply. The critical months for the supply of corn will be April to August, i.e. the lean period before the supplies from the 1999/2000 first season crop, which will be planted in the early spring, will be ready for harvest. Watching what happens to corn prices will be key

to understanding whether corn supplies will continue to be sufficient to cover both human and animal consumption needs during the remainder of the year or whether supplies are getting tighter.

Beans

The FAO team estimated that domestic production of beans during 1998/99 would be around 61 thousand metric tons and that human consumption would be around 75 thousand metric tons. When other uses are also taken into account this would imply an import requirement for beans of 23 thousand metric tons. However, FAO also assumed that there was a sizable carry-over of stocks from the previous year when domestic production was well above average. And if one takes these carry-over stocks into account and assumes a minimum closing stock for the year of approximately 8 thousand metric tons, the estimated import requirement for beans falls to 10 thousand metric tons. The FAO team suggests that this entire requirement should be met by food aid. And in fact, almost 11 thousand metric tons of beans have already been pledged by the United States as part of its food assistance to Honduras during 1998/99. In other words, if one believes the FAO estimates of supply and demand for beans, the import requirement for beans for 1998/99 is almost fully covered by pledges. The slightly over one thousand metric tons of beans that are being imported by CARE under the regular Title II program should probably not be counted as making a contribution to the losses due to Hurricane Mitch, because these beans will be used in an area of the country that was not affected very much by the Hurricane and, because the regular Title II program is really adding to the demand for beans in the country, due to the way in which the food is targeted, rather than filling a gap in supply that was created by the hurricane.

Table 7: A Comparison of the Alternative Estimates of the Supply and Demand for Beans During the 1998/99 Agricultural Year (September 1998 to August 1999) (000 Metric Tons)

	FAO	GOH	Author
I. Domestic Supply	61	65	65
II. Utilization	84	67	93
Human Consumption	75	54	81
Other Uses*	9	12	12
III. Import Requirements	23	2	21

* Includes quantities used for seed and expected losses

However, if one accepts the Government's estimates of the supply and demand for beans in the country (that domestic production was 65 thousand metric tons and human consumption was only

54 thousand metric tons), than the import requirement for beans for 1998/99 is only two thousand metric tons. If this were the case, substantially more beans have already been pledged in food donations than are needed, and we probably should be seeing lower bean prices than we are seeing. On the other hand, if one uses the Government's estimates of bean production and a higher estimate of human consumption of beans, one that is based on the 1993/94 survey, then import requirements jump back up to around 21 thousand metric tons or close to the FAO estimate without taking stocks into account. The problem with using the FAO stock estimates is, that without knowing more about how they were derived, one could just as easily assume that if domestic production were higher during than normal during a previous year, some or all of this excess production was exported to other countries in the region rather than ending up as closing stocks. In amy event, all three of these scenarios suggest that there will also be a need to carefully monitor the market for beans during the rest of the year, including by monitoring bean prices.

Rice

Even in normal production years, Honduras imports around 30 thousand metric tons of rice a year, and in 1997 it imported over 38 thousand metric tons (see table 4). The FAO team estimated that domestic production of rice during 1998/99 would be around 18 thousand metric tons and that human consumption would be around 65 thousand metric tons. When other uses are also taken into account this would imply an import requirement for rice of 51 thousand metric tons. However, FAO also assumed that there was a sizable carry-over of stocks from the previous year when domestic production was well above average. And if one takes these carry-over stocks into account and assumes a minimum closing stock for the year of approximately 7 thousand metric tons, the estimated import requirement for beans falls to 40 thousand metric tons.

Table 8: A Comparison of Alternative Estimates of the Supply and Demand for Rice During the 1998/99 Agricultural Year (September 1998 to August 1999)(000 Metric Tons)

	FAO	GOH	Author
I. Domestic Supply	18	13	13
II. Utilization	69	55	78
Human Consumption	65	52	75
Other Uses*	4	3	3
III. Import Requirements	51	42	65

* Includes quantities used for seed and expected losses

The FAO team expected that the bulk of this requirement would be met by food assistance. And, in fact, 26 thousand metric tons of rice have already been pledged by the U.S. Government alone,

leaving an additional 14 thousand metric tons to be covered by additional food assistance or commercial imports.

However, if one accepts the Government's estimates of the supply and demand for rice in the country (that domestic production was only 13 thousand metric tons and that the demand for human consumption is only 52 thousand metric tons), than the import requirement for rice in 1998/99 is also less than the FAO estimate -- only 42 thousand metric tons instead of 52 thousand metric tons. If FAO is right about the size the carry-over stocks, this would leave only

Table 9: A Comparison of Alternative Estimates of the Supply and Demand for Sorghum During the 1998/99 Agricultural Year (September 1998 to August 1999)(000 Metric Tons)

	FAO	GOH	Author
I. Domestic Supply	85	71	71
II. Utilization	132	128	127
Human Consumption	40	39	37
Animal Feed	81	79	79
Other Uses*	11	11	11
III. Import Requirements	47	57	56

* Includes quantities used for seeds and expected losses

an import requirement of 30 thousand metric tons and a shortfall, taking the current pledges of rice donations into account, of only 4 thousand metric tons that would have to be covered by additional food assistance or commercial imports. However, the Government's estimates of human demand for rice are likely to be too low. And, if one uses the Government's estimates of rice production and a higher estimate of human consumption of rice, one that is based on the 1993/94 survey, then import requirements jump up to around 65 thousand metric tons that would need to be covered by carry-in stocks, additional food assistance and/or commercial imports.

Sorghum

The reduction in the estimated output of sorghum is relatively small (9 thousand metric tons), reflecting the additional production expected from the replanting that took place after the hurricane. The country is a net importer of sorghum even in normal production years. The FAO team estimated that 47 thousand metric tons, which are the normal level of sorghum imports, will be required in 1998/99, all of which are expected to be imported on a commercial basis for animal feed. This assumes that the current consumption patterns do not change. And the estimates made by the Government and by the author of this report based on the more recent

estimates of the use of sorghum for human consumption are within the same ball park as the FAO estimates.

Wheat

Honduras is a regular importer of wheat. Most imported wheat is milled into wheat flour and used for human consumption. For several years in the early 1990s, low grade wheat was imported to substitute for yellow corn in animal feeds and approximately 10,000 metric tons was imported for this purpose last year. During the 1980s and until 1993, the majority of wheat imports came in on a concessional basis. During the last five years, wheat imports ranged from 119 and 215 thousand metric tons. In the 1997/98 agricultural year, wheat imports amounted to 158 thousand metric tons, almost all of which was imported on a commercial basis. The FAO team estimated that 138 thousand metric tons would have to be imported during the 1998/99

Table 10: Donations of Basic Grains and Beans Pledged by the United States for 1998/99 (October 1998 to September 1999) (Metric Tons)

PROGRAM TYPE AND RECIPIENT	Corn*	Beans	Rice	Wheat
Regular Title II --CARE	828	1,123	1,123	7,425
Emergency Title II	24,770	9,750	25,260	
CARE	6,6508	3,850	7,360	
CRS	7,200	3,600	7,200	
WFP	10,940	2,300	10,700	
Section 416 -- GOH	15,000			50,000
FFP -- GOH**	65,000			
FFP -- CRS				10,000
TOTAL	105,628	10,873	26,383	67,425

* Includes CSB and cornmeal (CARE's regular Title II program includes 71 metric tons and its emergency program includes 4,850 metric tons which together with the 220 metric tons in the WFP program totals 5,141 metric tons)
** A decision was made in late February to substitute wheat and soybeans and/or soybean meal for the 65,000 metric tons of corn that was originally programmed under this Food for Progress Program.
SOURCE: USAID and USDA as of 2/26/99

agricultural year. This would provided about 23 kilograms of wheat per person. Over 67.4 thousand metric tons in donated wheat have already been pledged by the U.S. Government alone

(see Table 10).

CONCLUSIONS AND RECOMMENDATIONS

The initial estimates of losses in domestic food production due to Hurricane Mitch now appear to be too high. This has implications for the level and composition of the food assistance program, since the current pledges were based on these initial estimates.

The most recent estimates of the domestic production of basic staples, based on the results of the Government's semi-annual survey of basic grains production, indicate that the production of corn and beans -- the two most important staples in the Honduran diet -- will be higher than was suggested by the earlier estimates and the domestic production of rice will be lower. More specifically, domestic corn production for the 1998/99 agricultural year is now expected to total 505 thousand metric tons, domestic production of beans is expected to total 64 thousand metric tons, rice 13 thousand metric tons, and sorghum 71 thousand metric tons. This translates into an expected shortfall in the supply of corn from domestic production of around 122 thousand metric tons (instead of the 200 thousand metric tons that the FAO team had estimated), a shortfall in beans of around 10 thousand metric tons (instead of the 35 thousand metric tons that FAO estimated), a shortfall in rice of around 10 thousand metric tons (instead of the FAO estimate of 8 thousand metric tons), and a shortfall in sorghum of around 9 thousand metric tons (instead of the FAO estimate of 10 thousand metric tons).

It is not unusual for initial estimates of damages due to a natural disaster such as Hurricane Mitch to be overstated. However, in this case the smaller net losses in the production of corn and beans also seems to be due in part to the success of the emergency program that the Ministry of Agriculture and Livestock undertook to encourage farmers to plant more area to corn than is normal during the second season and to replant some of the second season bean fields that were damaged by the hurricane.

Honduras has relied on commercial imports to help meet its domestic demand for basic grains even in years of normal production. Post Mitch, there is the question whether Honduras will have sufficient foreign exchange available to pay for these normal level of commercial imports, let alone to make up some of the losses in supply due to Mitch. If not, food donations may also be needed to help make up a shortfall in commercial imports and not just in domestic production. Here there is a lot of uncertainty. What we do know is that export earnings will be down as a result of the extensive damage that the hurricane did to the country's major agricultural export crops, and the demand for foreign exchange will have increased to meet the investment needs for reconstruction. The IMF has estimated, for example, that Honduras could have an unfinanced, balance of payments gap for 1999 of as much as $250 to $300 million. However, we do not know what this means in terms of its effects on imports of specific commodities.

Approximately one third of the food assistance that has been pledged by the U.S. Government is being made available to people who were directly affected by the hurricane and approximately two thirds will be sold in the market. The assistance that is provided directly to people who were

affected by the hurricane is not expected to have an effect on market prices because these people have lost their assets and income due to the hurricane and are not expected to be able to have access to sufficient food until they are able to get back on their feet economically. For some, this means getting their jobs back, for others it means being able restore their farms and harvest a crop, and for some it means some of both. In this case, the food that is being supplied is creating its own demand. However, in the event this food is not well targeted to the people whose access to food was negatively affected by the hurricane, the food will be adding to the supply in the country and not to the demand and it too can put downward pressure on market prices and create a disincentive to local producers. The objective of the monetized food assistance is to prevent food prices from rising as a result of the loss in supply due to the hurricane so that lower income consumers who still have jobs and income will not have to pay more for their basic staples as a result of the hurricane. However, care needs to be taken that the amount that is supplied in the form of monetized food assistance does not exceed the effective demand for the product which may well be lower than normal due to the effects of the hurricane.

The U.S. Government has included corn, beans, rice and wheat in its package of assistance. The amount of corn that was originally pledged in food assistance by the U.S. Government, which appears to be the only source of corn donations, would have made up 105 thousand metric tons (or over 85 percent) of the estimated 122 thousand metric ton shortfall in the availability of corn from domestic production. Eighty thousand metric tons of this was to have been sold (monetized) and the remainder used in direct feeding programs.

The Honduras Government, however, was concerned about the potential disincentive effects of these corn donations on domestic producers. The wholesale market price for corn has been lower during the first three months of 1999 than it has been at this time of year during the previous four years. And, these low prices have led some to conclude that there might be more than adequate supplies of corn in the country now or the expectations that supplies will be more than adequate in the near future. This is an important issue given the number of corn producers in the country. So, a decision was made to substitute wheat and soybeans and/or soybean meal for the 65 thousand metric tons of corn that was to be supplied under USDA's Section 416 program with the Government. This means that the amount of corn that will be supplied under the U.S. food donation programs will total less than 40 thousand metric tons or approximately one third of the estimated shortfall in domestic production.

The market for corn is probably not as tight as the Government of Honduras estimates suggest, because their estimate of the amount of corn that is used for human consumption is relatively low. And, the current low prices for corn in Honduras may just be a reflection of what is happening in other markets; corn prices also are lower in the other Central American countries and internationally. However, the current plans to substitute wheat and soy beans and/or soybean meal for corn under the Food for Progress program certainly reduces the possibility that the U.S. corn donations will have a disincentive effect on domestic corn production. On the other hand, the importance of corn in the human diet and as animal feed, the potential substitution effects between corn and bananas and plantain in the human diet and corn and sorghum for animal feed

in a Post Mitch environment, and the uncertainty with respect to commercial imports argues for continuing to carefully monitor the corn market over the remainder of the 1998/99 agricultural year. Watching what happens to corn prices will be key to understanding whether corn supplies will continue to be sufficient to cover both human and animal consumption needs during the remainder of the year or whether supplies are getting tighter.

The amount of beans that have been pledged as emergency assistance by the United States will make up over 97 percent of the estimated shortfall in domestic bean production -- 9,750 metric tons compared to an estimated shortfall of 10,000 metric tons. To this needs to be added the over 3 thousand metric tons of beans that have been donated to the World Food Program (WFP) from non-U.S. sources. These beans are included in the direct distribution program, and none are being monetized. For this reason, and as long as these programs stay targeted on those families that are still having problems recovering economically from the effects of the hurricane, these donations should not have a negative effect on market prices for beans. However, reportedly, there is an excess of beans in neighboring Nicaragua, and some in Honduras are concerned about the downward trend in bean prices. So this argues for carefully monitoring the market for beans during the remainder of the agricultural year, including by monitoring bean prices.

The amount of rice that has been pledged by the United States and is to be distributed under the emergency Title II program is significantly greater than the estimated shortfall in domestic rice production -- over 25 thousand metric tons compared to an estimated shortfall of 10 thousand metric tons. France also has donated rice to the WFP -- 7,500 metric tons -- and Italy just announced a donation of 2,582 metric tons. To this has to be added the over 26 thousand metric tons of rice that was imported commercially between September and December 1998. This adds up to almost 75 thousand metric tons (including the 13 thousand metric tons from domestic production). In other words, the amount of rice that is in the country (from domestic production, commercial imports and food assistance) or still coming as part of the pledges mentioned above is already significantly above the FAO and Governments' estimate of rice utilization for the entire 1998/99 agricultural year (FAO's estimate is 69 thousand metric tons and the GOH estimate is 55 thousand metric tons) and just a little below the author's relatively high estimate of 78 thousand metric tons, which was based on the 1993/94 household consumption survey.

In reality, some of the food that is being distributed directly to people through the Title II emergency program also may going to people who would not be consuming these commodities in these amounts under normal circumstances, and thus is not having a price effect. In other words, this food may be adding to demand rather than making up for a shortfall in supply. This could well be true for rice, which is not that important a component of the diets of lower income people who are the main beneficiaries of the Title II program.

Still, over a third of the total supply of rice in Honduras (and perhaps more if donations continue) is going to be coming from donations this year. This is in contrast to the recent past when rice donations have averaged less than two thousand metric tons (the average between 1993 and 1997) or less than seven percent of total imports and 1997 when rice donations were zero. There is

also the question about the likely effects of these donations on domestic producers. Here the picture is mixed. Rice producers were among those most seriously affected by the hurricane. However, an, as of now, unknown number may have trouble getting back into production due to damage to their lands and losses to infrastructure, no matter what happens to domestic rice prices. Furthermore, many producers were already having problems competing with rice imports, both in terms of quality and price, and levels of domestic production already were erratic and declining prior to Hurricane Mitch. The increase in the amount of rice coming as donations for direct distribution coupled with the losses in domestic production due to Mitch, also has implications for the domestic rice milling industry and the form in which rice is imported in the future. These are complex issues, and the recommendation here is that someone look at the supply and demand situation for rice in more detail, prior to the acceptance of additional rice donations, to assess the impact of the hurricane on the sector and the potential impact of additional rice donations on the production, marketing and importation of rice.

The Government of Honduras may have the best production statistics in Central America. This is a significant accomplishment, and one which USAID has supported over the years. However, one also needs good estimates of food demand in order to be able to get a true picture of the real food needs in the country. At a minimum, the Government should consider updating the factors that it uses for estimating human demand based on the more recent, 1993/94 household survey. Some additional effort devoted to improving the estimates of demand for animal feed and stocks would also be worthwhile.

Traditionally Bellmon analyses are done at the national level and for an entire year at a time. However, in this post-Mitch situation, it will be important to have an understanding of how the situation develops -- month by month -- over the remainder of the 1998/99 agricultural year. The critical months for the supply of basic grains will be April to August, i.e. the lean period before the supplies from the 1999/2000 first season crop, which will be planted in the early spring, will be ready for harvest. The last four figures in this paper provide a visual representation of this lean period. Because of Mitch, these months may be even more critical than usual. For example, stocks carried on farm will be lower than usual, because production is lower. However, if the results of the rapid rural appraisals that have just been carried out by CARE, CRS and the World Food Programs are correct, the stock situation is even more critical because a significant number of people are storing their reserves in the open or have reserves that are water damaged due to the damage that the hurricane did to their silos.

There is also the potential for disincentive effects within smaller geographic areas. This argues that the food cooperating sponsors need to take steps to better target their food distribution programs both geographically and, within communities, to the poorest and hardest hit families. This will help avoid disincentive effects in both the food and labor markets.

Flexibility and the capacity to respond to a rapidly changing environment will be important from now until the harvest becomes available from the first season grains crop (August and September) in the 1999/2000 marketing year. The emergency stage appears to be over and attention is now being focussed on the potential role of food in the reconstruction of the country. However, there

is a real danger that there will be serious floods again in some areas of the country once the rainy season begins in May/June, unless more progress in achieved in dredging the rivers than now seems possible. If this happens, emergency food assistance may be needed again to assist the people directly affected by the floods. And if production levels are significantly lower due to the remaining effects of Mitch and/or if crops are damaged in the fields again due to new floods, the period of time over which significant levels of food donations are needed could extend well beyond the fall harvest.

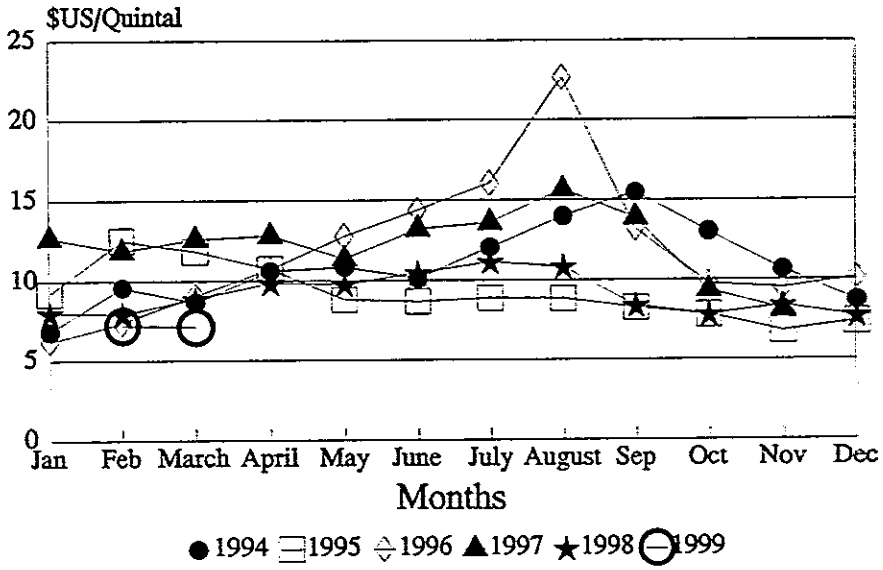

Figure 1: Monthly Wholesale Prices for White Corn

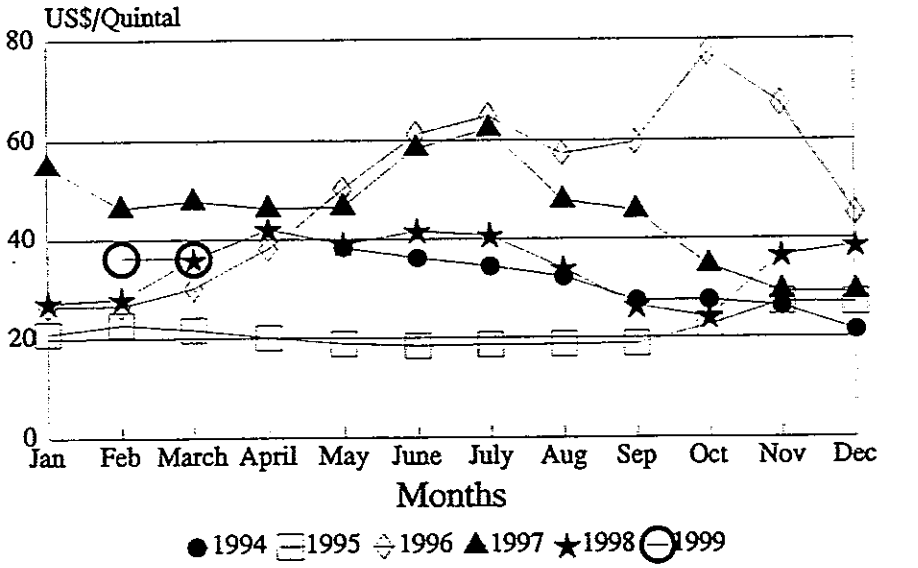

Figure 2: Monthly Wholesale Prices for Red Beans

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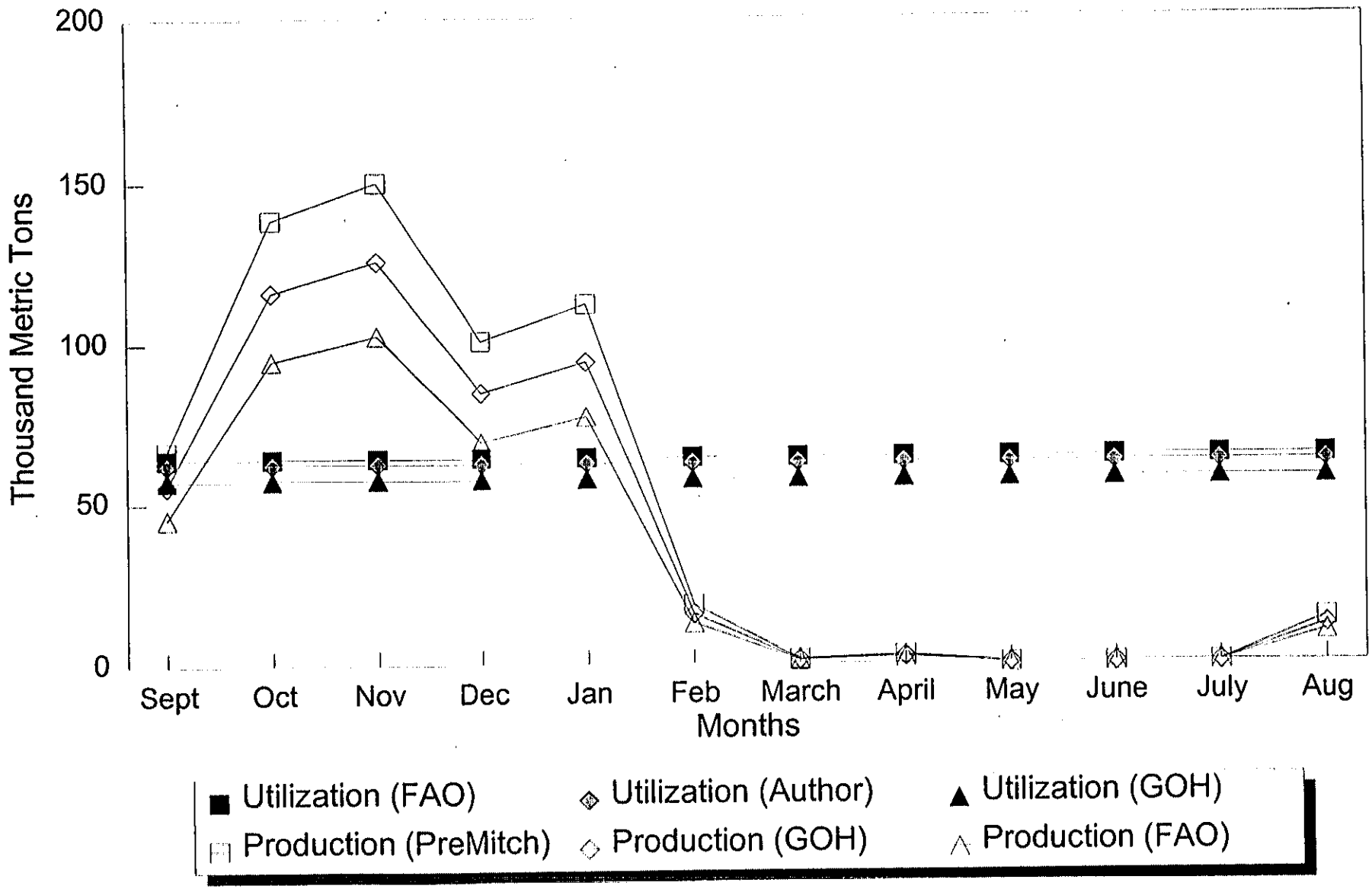
END NOTES

1. The analyses of the alternative estimates of supply and demand done abstracting from stocks, because the GOH's analysis does not include stocks, and this author has been unable to confirm the source of the FAO teams stock estimates.

2. The FAO estimates of supply and utilization in the tables 6 through 9 are based on information provided in the Special Report dated January 29, 1999 prepared by the FAO/WFP Crop and Food Supply Assessment Mission to Honduras; the GOH estimates were taken from an un-published table dated 2/17/99 prepared by the Ministry of Agriculture and Livestock; the author has based her estimates of domestic supply and uses for animal feed on the GOH's estimates and her estimates of human consumption on the results of the 1993/94 household survey.

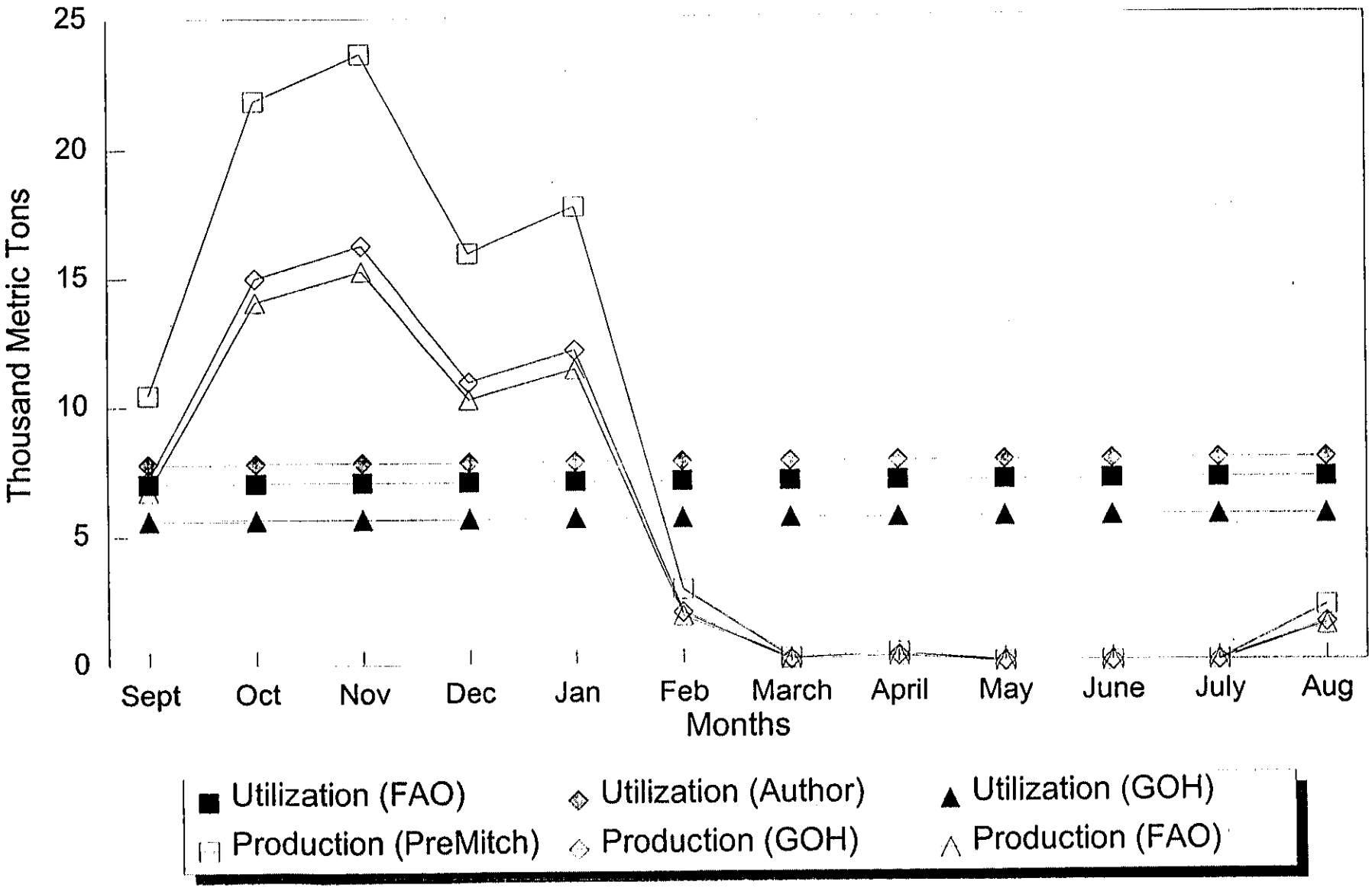
Corn: Distribution of Production

and Utilization During 1998/99



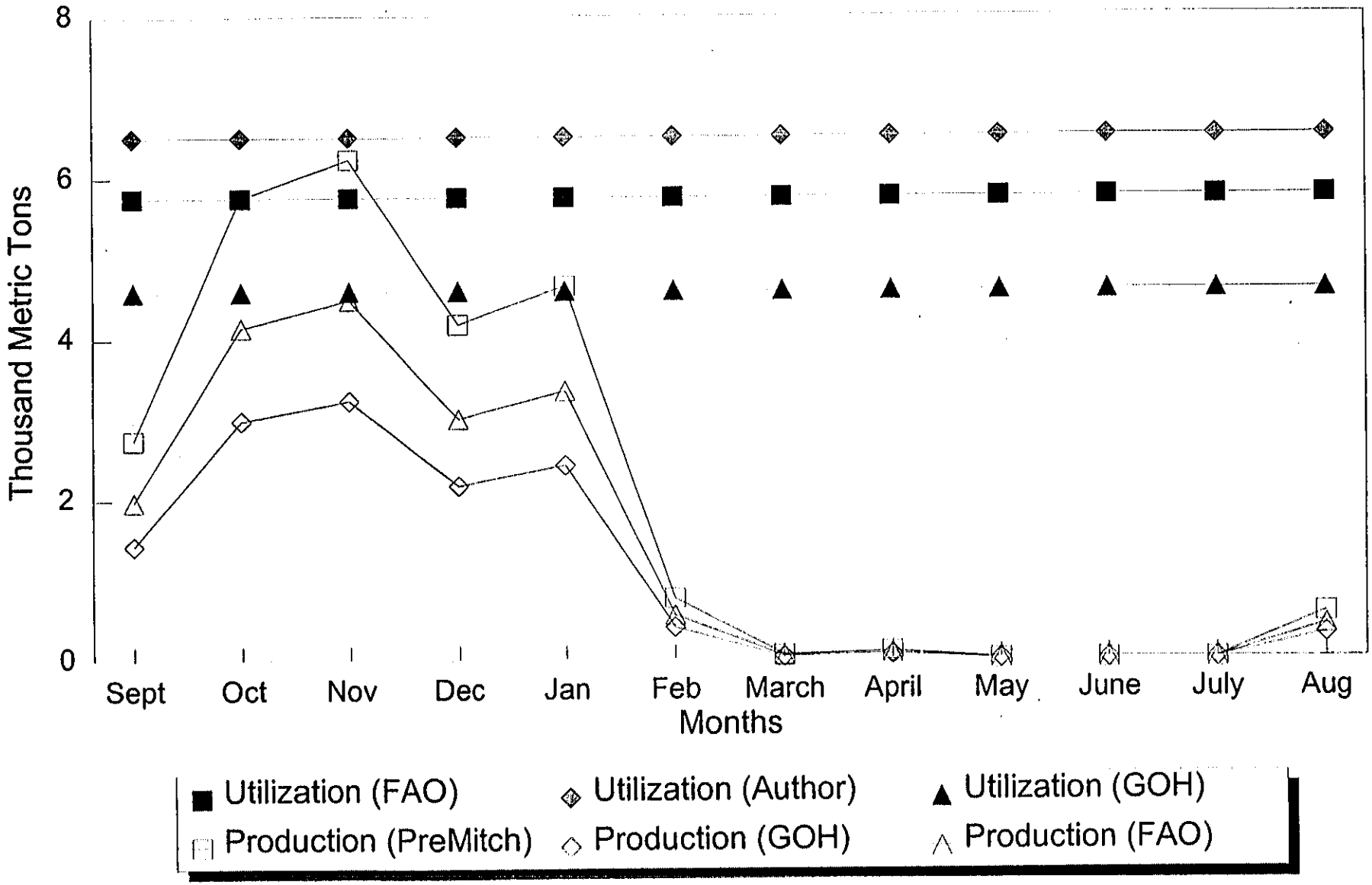
Beans: Distribution of Production

and Utilization During 1998/99



Rice: Distribution of Production

and Utilization During 1998/99



Sorghum: Distribution of Production

and Utilization During 1998/99