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The Costs and Cost-Effectiveness of School Feeding and School Bonos Programs in Honduras

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The Costs and Cost-Effectiveness of School Feeding and School Bonos Programs in Honduras

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LIST OF ACRONYMS

BMJF	Bono Mujer Jefe de Familia
EEC	European Economic Community
ICSMF	corn-based blended cereal
Lp(s)	Lempira(s)
MOE	Ministry of Education
PA	Programa de Alimentos
PRAF	Programa de Asignación Familiar
SAEH	Servicio de Alimentación Escolar de Honduras
SFB	soy fortified bulgur
WH	Western Honduras

1. SUMMARY

This study explores the relative merits and costs of distributing food and bonos (coupons or cash transfers) through schools; whether food or bonos are more effective in stimulating school attendance and at what cost; and how the existing food and bonos programs could be run more efficiently. The programs are: the school feeding "Merienda" and bonos "Bono Mujer Jefe de Familia" (BMJF) programs.

The study has two main components: the measurement of the impact of the bono and food programs operating through schools; and the measurement of those costs. The cost and impact data were put together to generate cost-effectiveness estimates for the bono program and feeding programs. The results are as follows:

Both the merienda (school feeding) and the bono programs have a positive impact on a number of schooling variables. The impact of the bono program is greater than that of the merienda program for each of the key effectiveness indicators measured, and more than four times greater for the useful school summary indicator "number of school years gained ."

The value of the benefit (to the beneficiary) that each beneficiary receives through the two programs is more than two and a half times as great for the bonos as the merienda. In the case of the merienda program, the community itself also contributes a substantial amount towards the operation of the program in the form of time, wood and cash, so that the **net** value of the merienda to the beneficiaries is even lower.

While the merienda program performs less well in relation to measured schooling and income transfer outcomes it has some advantages over the bono program:

- it provides a well-timed snack in school which is likely to play an important role in improving concentration and school performance;
- it increases the child's overall caloric and protein intake as well as boosting consumption of important micronutrients such as vitamin A;
- it is probably less vulnerable than the bono program to political pressures.

There is, therefore, a role for a merienda program. It will be important to explore more efficient ways of implementing the program. In particular, the option of centralized food processing appears to be one worth exploring further.

Neither bonos nor merienda programs in their present form are able, on their own, to overcome all the obstacles to school enrollment, attendance and progress. Important gaps remain, some of which may be within the power of the school system to address, others of which will depend on more fundamental economic problems being attacked.

2. INTRODUCTION

USAID has provided food aid (PL 480) to Honduras for over three decades with the objective of reducing malnutrition, hunger and poverty. Food is distributed to disadvantaged groups through school feeding, health center food distribution and food for work programs. In July 1990, the Government of Honduras initiated a food coupon (bono) program, supported in part by USAID, to subsidize the incomes of the poorest segments of the population and provide a safety net against food insecurity. Bonos, too, are distributed through health centers and primary schools. The purpose of using networks such as the schools and health centers as distribution centers has been, among other things, to encourage attendance at school and the use of specific services at health facilities. USAID's investment in these programs is substantial. It has funded the present study to assist in deciding whether and in what form to continue support. In particular, this study aims to explore:

- the relative merits and costs of distributing food and bonos through schools or health centers;
- whether food or bonos are more effective in stimulating health center and school attendance and at what cost; and
- how the existing food and bonos program could be run more efficiently.

The focus of this study is on the first two issues. It is not the purpose of the research to answer specific questions of operational efficiency — although data are disaggregated in such a way as to provide clues as to where inefficiencies may exist — and neither has there been any attempt to generate prospective cost or effectiveness estimates of the options not currently being implemented.

The study, therefore, had four main components: the measurement of the impact of the bono and food programs operating through health centers; the measurement of the costs of those same programs; the measurement of the impact of the bono and food programs operating through schools; and the measurement of those costs. The cost and impact data for each program were put together to generate cost-effectiveness estimates for the two bono programs and the two feeding programs.

The present report discusses the two school-based programs — the school feeding ("Merienda") and bonos BMJF programs. In particular, it focuses on the cost and cost-effectiveness components of that study, documenting the methods used to calculate costs, and cost-effectiveness and summarizing the key results. A companion document (Rogers et al., 1995) gives a general overview of way the two school programs function, describes the conceptual framework of the study and presents details of the methodology employed in estimating effectiveness. The current report draws frequently from that report. Two other documents report on the findings from the health-center-based studies (Sanghvi et al., 1995, and Fiedler, et al., 1995).

2.1 Conceptual Framework, Rationale and Objectives of the Bonos and Merienda Programs

Honduras has developed in recent years an extended primary education system which covers 86 percent of the population aged 7-13 years. Nevertheless, the efficacy and efficiency of primary education remains a major concern (World bank, 1995). Repetition rates are as high as 12 percent (1992), drop-outs average 4 percent during the last years of primary schooling, only 21 percent of enrolled students graduate on time after six years (15 percent in rural areas), and 66 percent never complete primary education. Repetition has been identified as the key problem, contributing to the high drop-out rates and

to low quality education by increasing class sizes and costing between US $7 million per year, (USAID, 1993) and US $13 million per year (UNICEF, 1993).

The decision to educate children or not is probably a complex one, but basically families will send their children to school if they perceive that the probable benefits of doing that will outweigh the probable costs. The benefits include gains anticipated from education per se as well as the value of inducements (such as merienda or bonos). The costs may include material outlays such as uniforms, fees, books, any special efforts or contributions required to take advantage of the bono or merienda and, probably most importantly, the opportunity cost of the labor of the child.

The purpose of the bono and merienda programs is, in part, to tip the balance of the family's accounting so that it becomes worth their while enrolling and keeping their children in school when they would otherwise not. By attracting children to school and keeping them there, it is hoped that they will receive an education that will make them more productive and effective members of the society, and that they and their families will in the long-run have better incomes and better nutrition. The bono program is also explicitly designed to effect a transfer of income to poorer families.

Nutrition is not the principal or explicit goal of either program but it is anticipated that both would have some nutritional effects — the bono program indirectly through increasing the income available to purchase food (poor people spend very high proportions of their income on food), and the merienda program by supplementing directly the food consumption of children. By providing a well-timed snack during school time, it is expected that the merienda would also enhance the ability of the children to concentrate and therefore benefit from being in school. There is ample evidence that educational performance falls when children are hungry.

2.2 The Programs and Their Organizations

2.2.1 Merienda

The Merienda program receives food from a few different sources including the EEC and USAID. USAID food aid is managed by the organization CARE and, unless otherwise noted, "merienda" in this report refers specifically to the USAID/CARE merienda program which accounts for about half of the Honduras school feeding effort.

The merienda program, in operation since 1959, involves the daily distribution of a morning snack to children in about 3,700 primary schools in nine departments in poorer western regions of the country. The food generally consists of corn-based blended cereal (ICSMF), oil and soy fortified bulgur (SFB) which is prepared into a beverage by mixing with water and provides an estimated 20 percent of daily energy requirements and 50 percent of daily protein requirements. Food is allocated on the basis of 1.25 lbs. ICSMF, 0.25 lb.s oil and 1 lb. SFB (i.e., 2.5 lbs. of food) per child enrolled per month for eight months a year. The program has been stable over many years in relation to the number of beneficiaries and schools and weight of rations, though type of food has varied somewhat.

There are basically two organizations involved in managing the implementation of this program: CARE and the Ministry of Education (MOE). CARE organizes the importation of the food from the U.S. to the port of Cortes and its transport to, and storage in their San Pedro Sula warehouse. CARE also monitors the use of food at field level through a team of supervisors. The Ministry of Education, through "Servicio de Alimentación Escolar de Honduras" (SAEH) — a section of the central Ministry, oversees

and manages transport of the food three or four times a year from the SPS warehouse to intermediate distribution points (subcontracted out to commercial transport companies) and supervises the merienda program in schools. The two organizations collaborate with regard to: the making of annual plans; requests for food and programming of food distribution; estimations of annual food requirements; and the annual budget.

In addition to these centrally managed activities, the Ministry of Education staff in the field assist the program part-time in the following ways. Those departmental and district (auxiliary) educational supervisors who are located at intermediate distribution points arrange the receipt, storage and distribution of food and prepare consolidated reports three times a year, while directors in participating schools arrange for the transport of food from these points to their schools, its storage there, and the daily preparation and distribution of food. They also keep a daily and monthly register. Parents often assist the program in a number of ways — food storage, transport, preparation and distribution — sometimes as voluntary labor and sometimes paid. The precise *modus operandi* differs between schools.

2.2.2 BMJF

The BMJF program, initiated in 1990, involves the distribution of a set of bonos two or three times a year (with a total worth in 1993 of Lps 180 per year) to the parents of selected children attending school, with a limit of three children per household. Targeting of schools (completed by the Programa de Asignación Familiar [PRAF]) and children (chosen by teachers) is on the basis of socioeconomic criteria.

There are two main players in the BMJF program — " PRAF and the Ministry of Education (MOE). PRAF is based in Tegucigalpa and is responsible for most of the centralized planning and management activities. It is assisted in this task by the Central Bank which organizes the printing of the Bonos (PRAF pays for the materials and labor the Bank provides the equipment and space) and by CENI in the Treasury which prepares and revises the list of beneficiaries and prints out labels.

The MOE helps implement the program at the intermediate level (through departmental supervisors and auxiliary supervisors) and in the schools where school directors and sometimes other teachers are involved in handing out the bonos to mothers. There is very little activity (we have assumed none) in the MOE at the central headquarters.

3. COST METHODOLOGY

3.1 The Scope of the Costs

We selected, for study of both costs and effectiveness, the calendar year 1993. This was the most recent year for which data could be gathered, and allowed time for the relatively recently established bonos program to have some degree of stability. Since the principal questions being addressed concerned the possible withdrawal or expansion or modification of existing programs rather than the establishment of new ones, the study focused on costs associated with the current administration of the program (and not start-up costs). Within the parameters defined by the scope of the costing exercise, the aim was to be as comprehensive as possible, to include all types of inputs (capital as well as recurrent), for all relevant activities, conducted at any level of the system (central, intermediate or school) and funded from whatever source (donor, government, participants).

Our focus is on program operating costs, (i.e., supply-side costs), including those resources contributed by the community, though we do also comment on the nature of the costs incurred by beneficiaries in gaining access to the program (demand-side costs). In other words, we distinguished two kinds of community costs — those associated with the operation of the program and those associated with the additional effort required by beneficiaries in order to obtain access to the program. In practice, the bonos community costs were of the first kind and the merienda community costs of the second.

Our initial analysis (and that of others) had suggested that the bonos program might be the more cost-effective. In order to strengthen our anticipated conclusions we therefore opted, where uncertainty required assumptions, to err on the side of exaggerating the costs of the bonos program and downplaying the costs of the merienda program.

3.2 Procedure in Gathering Cost Data

3.2.1 General

The first step in estimating costs was to obtain as detailed a description as possible of the kind of activities each program entailed, and at all levels from central office to individual school. This served three purposes: as a checklist to ensure that we were being comprehensive in our cost measures; as the basis from which some cost estimates were derived; and finally to enable us to decide on appropriate activity categories to allocate costs. We wanted, for example, to use categories which could be revealing about the way the program functions and we wanted to distinguish those categories of activity that were likely to be routine from those that might have more of a "start-up" character such as training and community diagnosis.

Most of the activity in the two programs occurs at one of two levels — central level and school level — with a relatively small amount occurring at or controlled by the intermediate level (as represented by districts and departments). We therefore took a two-pronged approach to gathering cost data focusing on the central and school level. In each of the main participating organizations (all with bases in Tegucigalpa), expenditure records were consulted and key individuals were interviewed to calculate central level operating costs and to estimate the contribution at intermediate level. For costs incurred at the school level, we used information collected during interviews with directors, teachers and students within a survey conducted in a sample of schools in the western part of Honduras.

3.2.2 Central Level *Operating* Costs

Expenditure records provided much of the information on costs we were seeking at the central level. Most of the key organizations had adequate expenditure data with a reasonable amount of detail. We excluded from our estimate of bonos program operating costs and part of the PRAF budget which was transferred to the Presidency of the Republic for "various expenses related to the execution, supervision and evaluation of the Bonos program and related programs of other governmental institutions" (Acuerdo 14-93), since we did not consider it to be a real cost of the program. (Including this sum — an attributable 906,750 — would have increased the estimate of total program operating costs by some ten percent but would not have affected our conclusions overall). We also excluded from either program the costs of the "census de talle" which, although used by the merienda program to assist in targeting more needy schools, has many other uses.

The expenditure records, however, had a number of limitations. First of all, they provided no useful information on capital items for which we required the annuitized value of *all* the capital items currently used and not simply those items purchased in that year. Secondly, they did not include items used by the program but for which no payment was made. Thirdly, they provided inadequate information on the specific activities for which they were destined; and, finally, a substantial proportion of the costs recorded in expenditure records were for resources shared with other programs.

To address the first three of these limitations we constructed estimates of these costs (capital, donations, activity-specific) by detailing the nature and quantity of the resources used through interviews and then applying an appropriate price (i.e., the ingredients approach). For capital we adopted a simple approach assuming that most nonmechanical equipment had a useful life of ten years, and mechanized equipment of five years. We did not discount the value of future years.

The disadvantage of the "ingredients" approach to building up cost estimates lies in the difficulty of being comprehensive and adequately assessing the elements of "waste," e.g., idle time, etc. which forms part of the costs of any program. We therefore did a number of checks of the soundness of our estimates by, for example, comparing the results with elements of annual expenditure records and by confirming that the sum of days we attributed to different activities for each person added up to a reasonable proportion of their total available days.

Since neither of the programs have organizations devoted solely to them, there were several important cost elements shared with other programs. Those costs that we could not tease out more precisely as belonging to a particular program were allocated between programs based, as far as possible, on factors likely to be related to level of effort. Table SCHL-1 outlines the nature and level of the allocative factors used for major overhead costs which are explained briefly in the following sections.

PRAF administers four different bono programs — the two most important of which are the school and health center bono programs. A small proportion of the non-bonos costs of PRAF are clearly identified with particular programs and we were able to measure those associated with BMJF. The bulk of the non-bonos costs, however, are general administrative costs serving all four bonos programs managed by PRAF. We allocated 58 percent of these costs to BMJF, reflecting the proportion of PRAF special budgets which is allocated to BMJF (a figure also very close to the proportion of all bonos produced that were for the BMJF program — 62 percent).

CARE administers a number of programs in Honduras — one of which is the Programa de Alimentos (PA). This program covers three food distribution activities — one through schools, one through health centers and one through day care centers "lactarios." Thirty-five percent (by weight and value) of the food distributed goes through the schools. We calculated the cost of managing the PA and, where school specific-data were not available, attributed 35 percent of those costs to the school feeding program. A small number of schools (less than one percent of those participating in the feeding program) actually receive breakfast rather than merienda. Taking into account that the breakfast program reportedly required more intensive supervision and management than the merienda program, we allocated five percent of the PA school costs to the breakfast program and the remainder to merienda.

It was more difficult to obtain clear data on CARE's overhead costs, so we simply applied the same proportionate overhead that CARE employed in their 1994 budget to their own estimate of direct costs of the school feeding program (about 80 percent of the direct costs — i.e., 45 percent of the estimated

total CARE costs of school feeding are general administration/overhead) which we understand represents about 11 percent of the cost of the international staff and other general administration costs.

In 1993, CARE was in the process of transferring responsibility for the management of the food programs to government departments. CARE staff estimate that these "phase-over" activities (training counterparts, etc.) accounted for some 30 percent of their activities in that year, and so we reduced our estimates of CARE costs by 30 percent in order to approximate more closely routine operating costs.

SAEH manages the school breakfast program as well as merienda and, within the merienda program, is responsible for two different components — one functioning with CARE food and the other with EEC food. In order to appropriately allocate a proportion of SAEH costs to the CARE merienda program, we examined the functions and responsibilities of individuals working in SAEH and allocated a suitable proportion of their time to the CARE merienda program using different allocative factors, depending on the nature of the work they performed.

3.2.3 School-Level *Operating* Costs

3.2.3.1 Ministry of Education

Cost data were collected from 92 schools in selected areas of Western Honduras (subsequently referred to here as the WH school survey), 51 of which had the bonos program and 80 of which had the merienda program (see Rogers et al., [1995] for details concerning sampling strategy, data collection procedures and questionnaires for that study). Thirty-nine of the schools had both a bonos and merienda program. We could see no reason why the costs of the bonos program would be affected by having a merienda program in the school or, similarly, why the costs of the merienda program should be affected by the presence of the bonos program, and so we grouped all the bonos schools (including those with and without merienda) and all the merienda schools (including those with and without bonos) for the purpose of our analysis of costs.

Using interviews with school directors and any staff involved in the bono and merienda programs, information was gathered for each school on the time contribution of staff to the merienda and bonos programs. Data were also collected through interviews with the director on other resources employed by the school (e.g., space for food storage and cooking) and on the contributions from the community. Additional information was gathered from interviews with a sample from each school of 16 students and their families. (See Annexes to Rogers et al. (1995) for copies of the questionnaires).

The following discussion outlines some of the key problems we encountered and the solutions we found.

Not all the staff identified by the school director as involved in the programs were interviewed. About one quarter of both merienda and bono schools had fewer staff interviewed than were reportedly involved in the programs. However, interviewers reported that they had interviewed everyone involved in the program and we suspect that directors, particularly in the larger schools, may not have been aware of exactly who was involved in these programs. For the purposes of our calculations, we assumed that the contribution of these uninterviewed staff was negligible. Even if this is not the case, we have no reason to believe that the omissions bias the estimates in favor of one program or the other.

In our WH school survey, staff were asked about the contribution they had made to either program. It is possible that this question does not fully capture the time costs of the program if staff, even when not

actively involved, nonetheless find their routines disrupted by the program. There are anecdotal reports, for example, that some of the larger schools do not have classes on the days when bonos are distributed. To explore this possibility further, we arranged for some supplementary interviews of school directors in the area studied (one of these schools had participated in our main WH school survey). All fourteen schools in the survey offered merienda and nine of these also participated in the bonos program.

Our conclusion from their responses was that unreported disruption was unlikely for the bonos program. It is mothers, rather than students who are recipients of the bonos, and the schools in our small survey almost universally report that the school functions largely as normal on a bonos distribution day with only the director, or, in larger schools, the director and another teacher involved. Our assumption that only those staff recording active involvement in the bono program are affected by the bono program, seems, therefore, a reasonable one.

In the case of merienda our supplementary survey suggested that in small schools individual teachers distribute merienda to their own class in their classroom while in larger schools they may do that or distribute to the whole school (using their own or voluntary or other paid labor). In either case, it appears that during the period of distribution of merienda (about half an hour — 26 minutes -in our small survey), all staff are involved in some fashion either distributing merienda or supervising children who are taking their merienda. It seems possible that we are underestimating the total costs of the merienda program which includes the disruption effect of the merienda on staff who do not consider themselves actively involved in merienda (preparing or distributing it) but are not able to proceed with other activities while merienda is in progress.

Although we had asked individuals interviewed at the school level for details of their salary and working hours, we decided against using that information on a person-by- person basis, since there was some ambiguity as to whether actual or official, teaching or total working hours were being reported, and it was not always clear what was being included in the salary estimates. Instead, using teacher's pay scales "Escalafón del Magisterio" we estimated typical annual salaries (to include standard allowances such as the extra holiday month pay, alguinaldo, and social security) to be about 25,000 lps (for directors) and 18,000 lps (for teachers). This corresponded well with the averages found in our school survey. Variations around the average salaries arise because of differences in years of service, category of teacher, level of responsibility, and location of the school.

To obtain an hourly rate, we divided these amounts by 1800 (the number of hours teachers are officially expected to work a year) and obtained estimates of Lps 14 and Lps ten per hour for directors and teachers respectively. For most of the calculations, we used the average (12 lps/hour) since directors and teachers were involved in roughly equal proportions in both the bono and merienda programs.

Our data on the transport costs for merienda at the school level were difficult to interpret since we had a number of sources of potentially overlapping data from directors, teachers and the community. Since our understanding was that schools do not have budgets with which to pay for services such as transport, we assumed that the cost of transport which directors estimated in Lps would come from household monetary contributions to the program. We also assumed that other contributions of community time in collecting food would be captured by our household survey, and that individual teacher reports would capture staff time involved in transport. We did not use the directors' estimates of the time involved or his assessment of the amount of support from the Parents Society "Society de Padres."

We collected information on the per diems received by teachers who were given training. However, we did not include them in our final estimates on the assumption that they were paid by the central level program and to have included them would have been double-counting. (They are, in any case, small — Lp 6 per school for the merienda program, for example).

3.2.3.2 Community

Families play no part in the operation of the bonos program. They do incur costs associated with the twice yearly collection of the bonos from school. We did not gather any data specifically on these costs. Instead we assumed that one productive family member spends three hours a year collecting the bonos, involving two trips, each with a return journey time to school of 36 minutes (WH school survey) and a little under an hour in school to wait for and collect the bonos. Their time was estimated to be worth 1.5 lps per hour (WH school survey).

By contrast, the benefitting families in the merienda program incur minor costs associated directly with gaining access to merienda, while making substantial contributions to the operation of the merienda program. Children receive merienda while attending school and have no need to make any special visits to collect merienda. They do generally supply utensils and sometimes bring sugar and soap. We have not attempted to value any of these inputs.

To measure the contribution of families to the operation of the merienda program, we asked each of the households selected for a household interview (i.e., 16 per school) how much they contributed in cash and wood each year and the value of the time they contributed in helping with cooking, distributing and unloading food. For each activity in each school, we calculated the average for the households interviewed and multiplied that by the number of students enrolled in the school and divided by 1.6 (the average number of beneficiaries per family) to get the cost per school. These values were added across all schools and divided by the number of schools with readings to get an average cost per school for that activity. The costs of the different activities were combined to get the average total cost per school.

In an attempt to avoid overestimating the costs of community contributions, we did two things: (i) we assumed that any values that were not filled in were zeros rather than simply information that was not available, and (ii) we excluded, for each activity, any of the schools where the contribution was higher than 50 lps per family per year (six schools for wood, four schools for money donations and three for cooking), in order to eliminate the few schools whose results were dramatically and unconvincingly higher than the rest.

For some activities in some schools, information was provided on both the time involved and their estimate of its worth which was used to estimate the value of community time (lps/hour).

3.3 Total Program Operating Costs

Central (and intermediate) level program operating costs have been estimated for the national program covering the whole of Honduras. Program operating costs at the school level, however, are based on a sample of schools. To develop estimates of the total operating costs for the national program (necessary since the principle measures of effectiveness of the school feeding and bonos programs have been estimated for Honduras as a whole (see Rogers et al., 1995), we needed to "factor up" to the national level the estimates of local costs which we had for the schools in our sample.

It can plausibly be argued that costs per school may vary depending on several different factors including the number of beneficiaries (economies of scale); the number of beneficiaries per family (efficiency in concentration); the number of students and/or staff in the school; the number of distribution days; and the starting date of involvement in the program (reflecting how much of the starting costs might be included); and features of the organization of the distribution of bonos/merienda. We hope to present the results of our regression models to test this hypothesis in a later report. We will also explore to what extent our sample of schools was not typical of bonos or merienda schools in the rest of Honduras in relation to those characteristics which appear to determine local costs. In the meantime, we have adopted the simplified assumption that the cost per school which we found in our sample can be applied to all the schools participating in these programs in Honduras. This is equivalent to assuming that local operating costs vary only as a function of the number of schools.

3.4 Food and Bonos Costs

The total cost of the bonos themselves was calculated as Lps 20 multiplied by the number of bonos distributed in 1993.

The price we employed to cost the food distributed in merienda is that paid by the U.S. government in the USA for the food plus a 30 percent mark-up for freight to Honduras (based on the relationship between the total cost of food shipments to Honduras in 1993 and the cost of its freight). We have used a simplified framework for calculating the price of the food. We did not consider possible deleterious effects on local Honduran prices and hence agricultural production, or the benefits of price supports for U.S. farmers, for example. The quantity of food used in the merienda program was calculated using data from our school survey on the amount and kind of food distributed as merienda per beneficiary in 1993. These data probably underestimate somewhat the amount of food needed to provide this merienda program since they do not account for losses or waste in the distribution system. We have rounded up our estimate by about eight percent to take account of that waste.

4. EFFECTIVENESS METHODOLOGY

4.1 Schooling Outcomes

Rogers et al., 1995 provide details of the methods employed to measure the impact of the merienda and bono programs on a set of schooling variables which included:

- "years ahead" (deviation from ideal schooling age);
- children repeating;
- student class days attended;
- children enrolling in school;
- academic achievement scores.

We were interested to know whether there was any "dose response," i.e., with the program having a greater impact where it was more intense. This was not possible at the individual level because all beneficiaries basically receive the same number of bonos and/or the same food ration (at least in theory, and we did not measure any differences that might have appeared in practice). At the level of the school, however, it was possible and we employed the measures "days of merienda per year" for the merienda program and "proportion of students receiving bonos" as indicators of program intensity.

4.2 Nutrition Outcomes

Nutritional impacts were not addressed in any detail in our study since they are not considered to be the primary objective of either program. We collected no information concerning nutritional status or household food expenditure patterns from the school study. We did obtain some crude food consumption information from interviewed households (as to whether a meal was eaten before or after school and of what size it was) to assist in determining whether the merienda was a substitute for meals provided at home.

In the health center study we did examine food expenditure patterns and food consumption in households. In that study, a number of the individuals from whom we obtained food consumption data were children enrolled in school (723 children). We have used this information, controlled for a large number of household level variables, to estimate the impact of merienda on caloric, protein and vitamin A intake.

4.3 Income Transfer

For the bonos program we employed data from the WH school survey (household questionnaire) on any commissions families had to pay in order to either spend or cash their bonos, so that we could calculate the value of the bono to them.

We developed an estimate of the value of the merienda food to beneficiaries based on the WH household questionnaire which solicited information on the prices of the closest substitutes to those food items included in the merienda. We applied those prices to the amount of food utilized by schools in the merienda program.

For both programs, we subtracted the estimated investment made by the community towards the operating costs of the programs to obtain the value of the net transfer to the beneficiaries.

We also determined the percentage of the beneficiaries who were below the poverty level (Rogers et al., 1995 p. 23 details how this was defined and measured), and calculated the value of the benefits transferred to them, and determined the distribution of beneficiary households by expenditure decile and quartile. We have not explored whether poorer households contributed relatively more or less to the programs.

5. RESULTS: COSTS

5.1 Cost Results — School Bonos Program

Table BMJF-1 presents key summary statistics on the bonos program both for the schools in our WH sample and for the country as a whole.

5.1.1 Central *Operating* Costs

Table BMJF-2 shows the central level operating costs of the school bono program by inputs and activities. These costs come to over Lps 3 million. Almost exactly half of this is in the form of salaries, fees, allowances, etc., for personnel, and labor is probably even more important cost than that since the nearly twenty percent of costs devoted to services probably includes a significant labor component.

Ninety-seven percent of these central level costs were met by PRAF itself (Table BMJF-3). One-fifth of PRAF's contribution was from a clearly specified budget for the BMJF program, the rest is an estimate of the general operating costs of PRAF which are attributable to BMJF.

It was not possible to define the nature of these general operating costs very precisely. The line items in the expenditure records identified more than half (58 percent) of them as being simply "administration" and the remainder promoting bonos among retailers (4 percent), monitoring and evaluation (6 percent), computing (8 percent), auditing (14 percent) and public relations (10 percent). For BMJF-specific costs, it was possible to allocate them reasonably precisely to different activities (Table BMJF-4).

5.1.2 Intermediate Level Costs

Ministry of Education staff at the departmental level (departmental supervisors and auxiliary supervisors) assist the bonos program in activities such as identifying beneficiaries and distributing bonos to schools. Based on interviews at the central level, we estimated the contribution of these staff to be of the order of Lps 500,000, 75 percent of this (Lp 371,975) associated with identifying beneficiaries and the rest (Lps 128,489) is for work in the distribution of bonos to schools.

5.1.3 School Level Costs

Labor is the only important cost incurred at the school level in the bonos program. Our WH survey suggests that schools in our sample were devoting on average about 120 hours per year on the bonos program (Table BMJF-5). More than half of this time (56 percent) was that of the school director.

The estimates do not seem to be unreasonable. For example, for distributing bonos, the estimate of 21 hours is very close to that which would have resulted by assuming that one person is fully occupied during teaching time for each of the distribution days (three per year), or by assuming that one person spends on average ten minutes per distribution (2.14 per year) with each benefiting family (51 per school).

Strictly speaking, the 13 hours required to collect bonos might reasonably be valued at close to zero since school directors generally collect the bonos from the district office (where they are delivered by PRAF officers) on routine visits to the district office which would in any case be made. We have, however, kept it in our time estimates though we have not attempted to value any non-time transport costs. (Eighty percent of the 88 percent of directors who had to collect bonos walked or used public transport).

Calculations of the relative importance of the time devoted to the bono program for the school year as a whole indicate that only about 2.2 percent of official working hours (or 4.4 percent of teaching time) in those sampled schools was devoted to bono-related tasks.

5.1.4 Bonos Costs

PRAF spent Lps 38.7 million on bonos for BMJF, representing 1,936,000 bonos produced. Over 97 percent (1,888,156) were distributed. The remainder were mostly annulled with only 11 not being delivered in package to the mother. 1,885,270 (99.8 percent) of the bonos distributed were redeemed in 1993.

5.1.5 Total National Costs

Assuming that the average level of effort expended in the schools we sampled is similar to that for schools participating in the bonos program in the whole of Honduras (3,478), and assuming an average hourly salary of Lps 12, the total labor costs at the school level come to:

12 (lps per hour) x 120 (hours per school per year)
x 3,478 (number of participating schools in Honduras)
= LpS 5,008,320 per year.

This may be a reasonable assumption if most of the time demands of the bonos program are fixed, and certainly our sample data suggest economies of scale — implying that some costs are fixed. Even if some costs do vary with plausibly, say, the number of beneficiaries, this will only matter if the population of schools participating in the bonos program in the whole of Honduras are distributing to significantly more or less beneficiaries per school. The rough data we have suggest that in Honduras as a whole, participating schools had on average about 75% of the number of beneficiaries as our sample of schools (59 compared with 78). This suggests we may be somewhat overestimating the school level costs of the Honduras bonos program based on our sample estimates. Indeed, if *all* the costs varied directly with the number of beneficiaries, a better estimate of the school level costs in Honduras as a whole would be:

120/78 (hours per beneficiary per year) x 12 (lps per hour)
x 205,371 (number of beneficiaries in Honduras)
= Lps 3,971,464.

Families do not make any significant contribution to the running of the bonos program. An adult family member *is* required to visit the school at each bono distribution in order to collect the bonos. Applying the data we gathered from our survey on the number of beneficiaries per family (1.6, suggesting 129,308 benefitting families in Honduras in 1993), distributions in the year (2.14), value of community time (Lps 1.5/hour), and travelling time to school (18 minutes, suggesting an average round trip including waiting and collection of, say, one and a half hours), gives an estimate of Lps 622,618 for the opportunity cost to families in collecting bonos.

Table SCHL-2 shows the value of time at school and at community levels.

5.2 Cost Results — Merienda Program

Table PME-1 summarizes key statistics on the merienda program both for the schools in our WH sample and for the country as a whole.

5.2.1 Central Level Operating Costs

Table PME-2 summarizes the costs attributable to the CARE merienda program.

5.2.2 Intermediate Level Costs

It is estimated that activities in the intermediate distribution points (district offices and selected schools) cost Lps 890,523 in 1993 — 77.5 percent of it (Lps 690,218) on activities related to distribution and storage and the rest (Lps 200,305) on information gathering and supervision.

5.2.3 School Level Costs

The WH survey suggests that merienda schools in our sample were devoting on average about 430 staff hours per year on merienda activities (Table PME-3). About half of this (54 percent, 234 hours) is spent on activities associated with the preparation and distribution of food and the supervision of this process, suggesting that a little over one person-hour a day is spent on these activities per school. (This is close to the estimate of 261 hours we would get by assuming that all staff (3.95 per school) are involved for half an hour per day each merienda day (132 days). The rest of the time is for collecting, unloading and storing food (25 percent) and completing forms (18 percent). Only a small amount of time is taken up with explanations to mothers or training, although 28 percent of teachers involved in merienda claimed to receive training for merienda in the last year.

Table SCHL-3 documents the significance of this merienda time in relation to the time available for teaching.

Seventy out of eighty schools incurred some costs in collecting food. The remainder received food directly and almost all of these (eight) acted as distribution points for other schools. The director estimated these transport costs to be of the order of Lps 85 per year. We are assuming that the schools themselves have no centrally allocated funds and that the financing of transport is provided by the community.

In addition, there are the costs associated with the infrastructure needed to store and cook the food. Schools reported that on average the size of the area used to store the food was some 25 square meters and to cook it some 20 square meters. We have not included estimates of the value of this space nor of the cost of cookers.

5.2.4 Community Costs

Ninety-five percent of the households interviewed claim to make some contribution towards merienda. Almost all reported providing wood (86 percent), two thirds contributed money (66 percent) and nearly half helped in the kitchen (46 percent). A smaller percentage helped with distribution (9 percent) and unloading (3 percent).

The nature and value of that contribution is documented in Table PME-4. On average, families interviewed indicated they were contributing the equivalent of Lps 27 per year (Lps 2,420 per school) towards the program, more than half of this in fuel and most of the rest almost equally divided between cooking and money donations.

These do not appear to be unreasonable estimates. For example, the estimate for contribution in fuel is compatible with those 86 percent of families who report contributing fuel, providing 0.1 lp worth of fuel every day for 175 days; the estimate for contributions in money is very close to that which one would get by assuming that two-thirds of families pay one lp every month for ten months; the value of cooking time is equivalent to someone assisting in the school kitchen for a couple of hours each one of 175 school days at 1.5 lps an hour. (Data provided through interviews with families suggest that individuals in the community value their own time at between one and two lps per hour).

As another check for the soundness of these estimates, we compared them with the summary results from the Director's reports of the contribution of the Society of Parents' (Sociedad de Padres). They estimated

a contribution of some 360 hours a year which is not dramatically different from the estimate derived from households — 335 hours per school assuming an hour to be worth 1.5 lps.

Care must be taken in interpreting the significance of the donated money. It is a transfer and only represents an *additional* cost to the program if it paid for activities we have not costed elsewhere. We will assume that it was used to pay for transport, the cost of which we have not included elsewhere, and cooking and other activities, whose value we *have* separately estimated. Of the Lps 520 per school in donated finances we shall, therefore, only include Lps 85, which is the average amount school directors estimated annual local food transport to cost.

The net value of the community contribution then comes to an estimated Lps 1,984 per year per school.

5.2.5 Food Costs

Shipping costs represent 30 percent of the total cost of the food. A small amount of the food received in CARE merienda schools comes from sources other than CARE. For example, in 1993, some schools received about one month's supply of EEC milk, and some schools receive small donations from NGOs. We have included these foods in our estimate of food costs but have not measured the costs associated with their administration.

5.2.6 Total National Costs

Assuming that the average level of effort expended in the schools we sampled is similar to that for schools participating in the merienda program in the whole of Honduras (3,464), and assuming an average hourly salary of Lps 12, the total labor costs at the school level come to:

12 (lps per hour) x 430 (hours per school per year) x 3,464 (schools) = Lp 17,874,240 per year

Some of these costs, however, are those incurred by virtue of the schools acting as intermediate distribution points, and so we subtract the Lps 890,523 already attributed to the distribution points, for a total of Lps 17,874,240 - 890,523 = 16,983,717.

Similarly, for the community contribution, if we use the cost per school from our sample and apply it to all participating schools in Honduras we get an estimate of 1,984 x 3,464 = Lps 6,872,576.

Table SCHL-3A summarizes the costs at all levels associated with the merienda program in Honduras.

6. RESULTS: EFFECTIVENESS

6.1 Effectiveness Results — School Bonos and Merienda Programs

Table SCHL-4 summarizes key effectiveness data: the coverage of the two programs, the degree of targeting the poor, the value of the income transferred to recipients, and the impact on schooling indicators.

6.1.1 Income Transfer

On paper, the bono itself is worth 20 lps. In practice some (5 percent) of those (61 percent) who converted the bono directly into cash reported that they were charged a commission (Lps 1.28 on average). In addition, some 5.7 percent of the 37 percent of households who used the bonos directly to purchase goods reported that they were charged for using bonos instead of cash (1.52 lps with each bono) and another 31 percent reported that prices with bonos were higher than with cash (7 percent reported they were lower). On average then (excluding the ill-defined effect of reportedly higher prices) the value of the bono to the consumer was some 0.07 lp less than 20 lps (i.e., 19.93 lps). The total value of the bonos distributed to mothers in Honduras comes, therefore, to 1,888,156 x Lp 19.93 = Lps 37,631,000. Beneficiaries of the bono program did not contribute to the operating costs of the program but did have to make an effort to collect the bonos.

The merienda program distributed food worth an estimated Lps 18,000,000 to the beneficiaries. Recipient communities themselves contributed about Lps 6,900,000 towards this program giving a net direct transfer to recipients of about Lps 11,100,000.

The net impact on families is only partly captured by these figures. For the families of those children for whom the bono or merienda tips the balance in favor of going to school, there will be the costs (and, presumably smaller, benefits) of going to school itself.

6.1.2 Targeting

Table SCHL-6 shows the distribution of bono and merienda beneficiary households by decile and quartile. Both programs are clearly successfully targeted to poor households and the results would be even more impressive using "beneficiaries" rather than households since poorer households tend to have more beneficiaries. Not surprisingly (given the individual as well as geographical targeting that is done), the bono program is more highly concentrated among the poor than the merienda program. The average annual household expenditure is Lps 8,500 for bono recipient households and Lps 9,200 for merienda recipient households, compared with the national average of Lps 13,700 (and a median of about Lps 10,500).

Bonos represent more than ten percent of household expenditure for approximately the poorest five percent of the population.

6.1.3 Schooling

Neither program had any measurable effect on the probability of a school-aged child being enrolled in the current year. The high rates of enrollment overall would in any case make it difficult to detect any impact. Nor did the programs appear to contribute to any significant improvement in academic performance. On the contrary there was a weak suggestion in the data that children in the program areas performed worse. Since it is unlikely that the programs actually reduced children's ability to learn in those children going to bonos or merienda schools, the effect is probably due to the program incentive to stay in school when a poorly performing child might otherwise drop out.

Both programs had a marked impact on the number of children repeating and the number of school years gained, and the bono program also had an effect on attendance. Table SCHL-4 summarizes those impacts that are described in more detail in Rogers et al., (1995).

We cannot determine with the data at hand, whether the merienda or bonos programs have had any generalized impact on schooling which has spread beyond those specific areas offering merienda or bonos. It is conceivable that such large programs affecting such a high proportion of the 8,278 public primary schools in Honduras, may well have altered the attitude of the general population to schooling. The very fact that the government was investing in schools and promoting attendance at schools through merienda and bonos may well have generated a broader interest in education by the community at large.

6.1.4 Nutrition

In terms of nutrition, we have no direct information about the likely effect of bonos, although we *do* know that the beneficiaries are mostly poor households and that the vast majority of women (90 percent) report that the bono is under their control. We also know that in schools receiving bonos, households devoted on average 70 percent of household expenditure to food. It seems likely, therefore, that an important proportion of the bono will be spent on food.

For merienda, the data from the households interviewed in the school study suggest that school feeding is not substituting for home feeding: merienda did not influence either the probability of eating before or after school or the size of either meal. The nutritional data on school children interviewed in the health center study, also reveal that most children who are not enrolled in merienda schools do not bring food to school with them — only 15 percent of non-merienda school children reported eating in school compared with 85 percent in merienda families. Perhaps more surprisingly, these data reveal that merienda has quite an important, statistically significant impact on caloric consumption (7.4 percent), protein consumption (11.2 percent) and vitamin A consumption (25 percent).

6.2 Cost-Effectiveness Results — School Bonos and Merienda Programs

Table SCHL-4 summarizes the cost-effectiveness indicators for the BMJF and Merienda programs.

7. DISCUSSION AND CONCLUSIONS

7.1 Cost-Effectiveness: Merienda versus Bonos

The CARE merienda and bono programs reach a similar number of beneficiaries in Honduras most of whom are poor: 86 percent of the beneficiaries of the bono program and 83 percent of the merienda beneficiaries come from families below the poverty level. Since the poor represent 79 percent of the population at large, these programs are both progressive: a higher proportion of the poor are beneficiaries than in the population as a whole. More impressive still is the extent to which both programs reach the very poorest groups: more than one quarter of bono recipient households and about one fifth of merienda recipient households are in the poorest ten percent of families. This targeting of the poor is in contrast with the way resources in the Ministry of Education (and the Fondo Hondureño de Inversión Social investment in education) are distributed with expenditures lower in poorer areas (World Bank, 1994).

The value of the benefit (to the beneficiary) that each beneficiary receives through the two programs is very different — that of the bonos (Lps 180) being more than two and a half times as great as the merienda (Lps 65). In the case of the merienda program, the community itself also contributes a substantial amount towards the operation of the program in the form of time, wood and cash, so that the *net* value of the merienda to the beneficiaries is even lower — some Lps 40 per beneficiary per year.

Both the merienda and the bono programs have a positive impact on a number of schooling variables. The impact of the bono program is greater than that of the merienda program for each of the key effectiveness indicators measured, and more than four times greater for the useful school summary indicator "number of school years gained." It appears that some of this is explained by the higher value to the beneficiary of bonos compared with merienda. But our data also suggest that the bono program has spill-over effects that go beyond the beneficiaries themselves: children who attend bono schools but do not receive bonos being encouraged to attend more frequently and progress more rapidly through school than children in non-bono schools. We are not able to identify to what extent this might be due to an individual's expectation of becoming a bono recipient in the future or to perceived improvements in school quality which might accompany a school's entrance into the bono program. Such quality improvements might happen as a result of the level of attention and supervision associated with the program encouraging more regular attendance by teachers and increasing the number of days schools function.

The greater achievements of the BMJF were accompanied by higher costs, total costs being some 35 percent above those of the merienda program. But this additional investment appears to have been worthwhile when the size of the additional impacts BMJF has had on schooling and income transfer is considered. For example, the total cost per school year gained in the bono program (lps 142) is less than a third of the cost per school year gained in the merienda program (lps 454), and to administer the transfer of one lp worth of benefit through the bono program cost one sixth of what it cost in the merienda program.

7.2 The Robustness of These Results

As mentioned earlier, our initial analysis (and that of others) had suggested that the bonos program might be the more cost-effective. In order to strengthen our anticipated conclusions we therefore opted, where uncertainty required assumptions, to err on the side of exaggerating the costs of the bonos program and downplaying the costs of the merienda program. This strategy, and the additional observations which follow, give us some confidence that our conclusion — that bonos are more cost-effective in relation to the outcomes we chose to measure — is a relatively robust one, and is not likely to be overturned by adopting different, reasonable assumptions.

7.2.1 Allocation of Shared Costs

PRAF general administrative costs have been allocated to the BMJF program in proportion to the number of bonos distributed to that program (58 percent). This probably exaggerates the cost of the school bonos program since some administrative costs are almost certainly fixed in relation to size — simply having any program implies a certain basic level of investment. Assuming that shared administration costs are proportional to the *number of bonos programs* (1/4) instead of *number of bonos* (58 percent) would make a big difference to the estimate of total central costs which fall from 3,311,769 to 1,864,192. The truth probably lies somewhere between.

In the case of CARE, we have allocated shared "Food Program" costs and general administration using the proportion of all food distributed that was distributed to schools (35 percent). It could plausibly be argued that the number of institutions served by the programs (schools represent 70 percent) would also determine the amount of effort devoted to the merienda program. Our choice of food weight (and value) rather than institutions (or some mix of the two) as the allocating factor probably underestimates the cost of the merienda program.

7.2.2 Valuation of Inputs

Staff time at the school level constitutes an important element in our estimate of the total costs of the merienda program, representing nearly half of total costs. The distribution of merienda and its supervision constitute 54 percent of this staff time. If merienda is substituting for a break that the students would in any case have, and staff who would otherwise supervise play are supervising or participating in merienda, there may be an argument for valuing that time at zero. If that were the case, the total operating costs of merienda fall to about 17 million and total costs fall by 26 percent. Even with this substantial reduction in costs, however, our overall conclusions, that the BMJF program is a more efficient way to meet income transfer and schooling goals, would remain the same.

By adopting the lower estimate of hourly wage for staff (i.e., assuming a working year of 1800 rather than possibly a more plausible estimate of 900 *teaching* hours), we have downplayed the costs at the school level, a strategy which favors the merienda program for which school level costs are relatively high.

We have used household valuations of the time the community devoted to various activities in support of the merienda program (1.5 lps). If unemployment rates are very high, however, the true opportunity cost of community labor might be less. This would reduce the estimated costs of the merienda program but by less than six percent.

7.2.3 Representativeness of the Cost Figures

By measuring the costs of the bono program at a relatively early stage in its operation (three years after it began operation in 1990), we have probably overestimated its long-run routine operating costs. Some of the costs we have picked up will be for activities associated with the early start-up phase and will not be needed or needed at the same level in the future. Central level activities with a start-up nature include commercialization, public relations and beneficiary identification which very conservatively accounted for 17 percent of costs at that level. At intermediate level 75 percent of costs were devoted to identifying new beneficiaries.

Most of the schools in our sample had been in the program for at least a year. But about ten percent of schools were new to the program in the year we studied. Their costs associated with beneficiary identification, training explanations to mothers and drawing up beneficiary lists would almost certainly fall in later years. On average 50 percent of the school time is currently spent on these activities. If we assume that the ten percent of new schools are spending five times as much as established schools, their fall to routine levels would imply a drop of about one third in these costs (or one sixth (17 percent) of all school level costs. It seems plausible that over the long term, total non-bonos *program-operating* costs could fall by some 20 percent, and possibly more if some of the routine tasks are performed more efficiently as staff acquire experience and skill over time.

7.2.4 Comparability of Scale

Direct comparisons of the cost per unit of effectiveness are legitimate since the two programs are of a similar scale. The CARE merienda program has a somewhat smaller total outlay (about three quarters that of the bono program), but it does not seem likely that expanding the merienda program would significantly affect unit costs: the opportunity for economies of scale with respect to expanding the

number of beneficiaries is probably small since it would almost certainly involve new schools and all the attendant transport, informational and supervisory costs that entails.

7.3 Additional Considerations

The merienda is more costly than the bono program in terms of income transfer and schooling impacts. But it has other advantages over the bono program: it is unlikely to encourage women to have more children in order to benefit from the program; it provides an appropriately-timed snack which may have an important impact on level of concentration and performance of children (many of whom would otherwise not bring food to school), and it augments protein, calorie and, most dramatically, micronutrient intakes. Furthermore, the merienda program is not vulnerable, to the same degree as the bono program, to political pressures — pressures which led, for example, to the suspension of the bono program for about six months in 1993/94 during the changeover in political administration.

Several features of the bono program make it vulnerable: it is targeted at the politically weak poor; beneficiaries have not had time to develop a sense of ownership that might provoke them to protest effectively were the program withdrawn; it is clearly associated with the previous administration from which the present administration might wish to distance itself; and it relies heavily on substantial levels of external funding. On the other hand, the poor constitute a very large proportion of the total population and, with time, their attachment to the program will grow making it increasingly difficult politically to withdraw the program on whim. Furthermore, the motivation to dissociate from it will diminish as it outlives various administrations. If studies such as the present one can demonstrate that the program is working well, reaching appropriate targets, stimulating school attendance, and not too top heavy in administration, opposition is also likely to be less. Finally, there may be ways to improve the chances of securing long-term external help by, for example, tying the financing of the bono program to the USAID food aid program (with monetized proceeds from food sales used to purchase/support bonos). Food aid has had considerable domestic backing and may continue to be less vulnerable than most aid programs to cuts. The direct costs (purchase and freight of food, port charges and monetizing costs minus receipts from sale) and indirect costs (the effect on Honduran and US markets from purchasing and importing U.S. food) would need to be considered in deciding on the merits of this approach.

The question of the sustainability of the bono program can be asked in a very different way. Is there a danger that a program such as this, designed initially as a temporary response to problems associated with structural adjustment, might establish a life of its own and continue inappropriately because of inertia or political pressure? Should there be targets for phasing out the program and measures taken to ensure and ease its withdrawal, and minimize any potentially negative effects? Does this program develop a "hand-out" mentality and the expectation of receiving something for nothing. When the program is withdrawn, are schools likely to experience a sudden falling off in enrollment and attendance or will new social norms and expectations have been established? These are important considerations not directly addressed in our study which need to be taken into account in deciding whether and in what fashion to continue support for the bono program.

7.4 Possible Improvements to the Bono Program

There probably are opportunities to streamline the program operating costs of the bonos program (e.g., the information system, the method of determining student eligibility, the system for minimizing theft) and these may be important to explore further, particularly if there are attempts to integrate the management of bonos program into the Ministry of Education. However, any improvements that are

made will have only a marginal impact on the cost of the program as a whole, 81 percent of which is for the bonos themselves. Even if program operating costs were halved this would only reduce the total costs of the program by nine percent. Furthermore, the program operating costs of the BMJF are comparable with those of targeted social programs elsewhere in Latin America (Grosh, 1994).

How appropriate and efficient is the targeting currently employed in the school bono program in view of its dual aims — to transfer income to the poor, and to encourage those who would otherwise not go to school?

7.4.1 Targeting Poverty

In terms of poverty alleviation, the bono program appears to be well-targeted — 86 percent of the beneficiaries come from poor households, and 52 percent of bono recipient households fall into the lowest expenditure quartile. This is achieved through a mixture of selecting schools in poorer areas (the poorest 7 of Honduras's 18 Departments) and poorer children within those areas (selected by teachers usually on the basis of some kind of household level socioeconomic assessment).

While we could not estimate precisely the resources involved in such targeting, it appears to be considerable, and most of it is probably associated with identifying individuals rather than schools. Since such a high proportion of the general population is poor anyway (79 percent) (and socioeconomic status within schools appears to be reasonably homogeneous), the question arises as to whether it might make sense to devote fewer resources to targeting individual households and, perhaps, do what the merienda program does, namely — to provide bonos to all children in selected poorer schools and capitalize on economies of scale at the school level.

There are reasons for believing that this would not be an appropriate strategy in the case of bonos. The value of the bonos is high — for the poorest ten percent of households, the bonos from a single child attending school represent nearly five percent of total household annual expenditure, and with three eligible school age children that would rise to 14 percent — and concentrating more bonos in fewer schools is likely to distort behaviors in undesirable ways by, for example, encouraging families to relocate to areas where schools offer bonos. Furthermore, giving bonos to all children in some schools and none in the others would eliminate the spill-over effect on nonrecipients in bonos schools. Finally, while identifying beneficiaries is not an unimportant element of the operating costs, it is very small in relation to the value of the benefit (bono).

Should the bono program be heavily targeted to the poor? This would entail additional administrative costs to establish more rigorous criteria for enrolling beneficiaries. If those criteria are *too* strict, it could limit the take-up, if, for example, those eligible are the very ones for whom sending a child to school (and losing his labor) is too costly.

It may be that if you really want to provide an incentive for the very poorest group you have to offer more in bonos. Indeed, there is some (weak) evidence that suggests the effect of bonos on academic progress "years ahead" may be less in poorer families (Rogers et al., 1995). There may, in other words, be some kind of tradeoff between targeting for the purposes of poverty alleviation and targeting to improve schooling outcomes.

There is also the danger, if the targeting criteria are too precise (whatever the level they are set), particularly in monetary terms, that families will alter their behaviors in unproductive ways in order to

become eligible (e.g., working less to earn less, not purchasing items that would otherwise be purchased). Finally, if the result of targeting the poor on an individual basis is to spread the distribution among more schools there are not only the increased costs of identifying beneficiaries and transporting bonos to more destinations, but possibly some reduction in impact as program concentration falls. Our national survey results show that the intensity of the bono program (percentage of students receiving the bono) has a significant impact on key schooling outcomes (e.g., "years ahead").

7.4.2 Targeting for Educational Purposes

Since one of the key purposes of the bono program is to improve education, this might suggest it is appropriate to target those characteristics associated with poorer school performance. In our national survey we found that being older, a boy, in a larger family, with lower household income and less educated parents were all characteristics associated with poorer schooling outcomes in terms of the measures of enrollment and "years ahead." However, even putting cost issues aside for one moment, one should be cautious before advocating such targeting. In the first place, one might have reasonable misgivings about, say, targeting larger families and boys rather than girls. In addition, there is some (weak) evidence that the programs have less impact on some of these subgroups (e.g., that the poorest families respond, in schooling terms, less well).

Enrollment rates in the first few years of primary school are very high in Honduras and fall off markedly in the second half of primary school. It may make more sense to target bonos to older children rather than starting, as is current practice, with children in grades 1-3. Not providing bonos until children reach grades 3 to 6 would provide an incentive to progress as rapidly as possible through the first few years of schooling and to stay in school for those last few crucial years. This kind of broad brush targeting is not expected to have cost implications and *is* likely to improve school outcomes. It is also possible that it might reduce the effect on poverty alleviation if only the better-off children can afford to continue through grades 1 -3 without some support, and this aspect would need to be explored further.

The stated policy of denying children bonos if they repeat is not observed in practice. Whether it is advisable that it should be depends on the value of using those bonos elsewhere. While most would argue that repeating a year of school is better than dropping out altogether, it is not clear whether continuing to provide bonos to children who do not progress is preferable to giving them to children who do. To make this judgment, we would need to know more about the relative impact of these two options on keeping children in school, encouraging progress through school and enhancing educational achievement. Similar comments apply to the question of what kind of attendance criteria is appropriate to enforce as a condition for continued receipt of the bonos.

7.4.3 The Bono — Its Value and Denomination

The impact data suggest that the bonos are not compensating fully for the effects of being in a disadvantaged community. Increasing the value of the bonos in those communities is one possible approach (and is unlikely to affect program operating costs), although more broadly based packages of economic and social development of the community is probably a more appropriate long-term strategy. The value of the bono has recently increased to 30 lps. This is a nominal increase of 50 percent, which, however, only partially compensates for inflationary increases which, between 1990-1993, eroded the value of the lempira by about 60 percent.

7.4.4 Cost of Access

The cost of collecting bonos is small in relation to either operating costs or the value of the bonos distributed, and it seems unlikely that parents do not participate in bonos because of the cost of access. Some options for reducing these costs — e.g., less frequent distributions, distributing the bonos to children themselves — are probably not realistic. We did not make any direct observations regarding the length of time mothers collecting bonos had to wait, but in many government programs this is an issue given very little attention and it would not be surprising if waiting times were long. If this is the case, it is something which could probably be remedied with some simple organizational changes.

7.5 Possible Improvements to the Merienda Program

Program operating costs are very high in relation to the value of the food distributed to the merienda program. A survey of targeted social programs in Latin America (Grosh, 1994) found administrative costs to range from 0.4 to 29 percent of total costs while in the case of the Honduras merienda program this figure is 69 percent (of noncommunity costs). This is not to suggest that the administration of the program is necessarily poorly done or wasteful. In fact, the absolute value of the administrative costs is not dramatically higher than that of most of those reviewed programs (Grosh, 1994) — the median cost was $US 5 per beneficiary per year — compared with $11 for merienda with what is probably a more thorough costing of the local inputs. Using less costly management outfits (some CARE salaries are very high by Honduras standards), exploring ways to streamline the information and supervisory system (e.g., less supervision, more punitive measures), and closely monitoring the process for selection of transport companies are some ways in which central-level operating costs might be reduced without undermining performance.

At the local level, schools are already tapping into the community in a significant way and this has helped to reduce overall costs of the program (community labor is less costly than that of teachers) and, in particular, the costs to the government.

In general, it is not easy to see where cuts in operating costs might be made given the nature of the commodity being distributed. The administratively top-heavy nature of the program is not necessarily solved by increasing the amount of food distributed. If this means serving more schools, a significant proportion of the operating costs (transport, supervision, information gathering) are also likely to increase. If it means more food in schools already served, operating costs would also rise though less dramatically, and, probably more importantly, larger meals in schools might start to substitute for home-prepared meals.

A considerable proportion of the costs at the school level are associated with the preparation of the merienda (the provision of wood and time devoted to cooking), which raises the question of whether some more centralized production of an edible food — perhaps in the form of a biscuit — would be appropriate. This could conceivably reduce transport and storage costs as well if the processing of the food concentrates its volume. Centralized production might also have other advantages such as ease of standardization of portions and the possibility of manufacturing a food which is more attractive and more easily consumed than the merienda currently prepared.

About 25 percent of the total costs are for the food itself. Freight accounts for a significant proportion of this cost (30 percent). Ways of reducing this should be explored. The estimated prices of equivalent foods in the Honduran markets (obtained from our national household survey) were about double those

associated with U.S. procurement and shipping. Some of this is explained by the fact that the Honduran prices were at the shop level (incorporating transport and overhead elements). It is not clear what bulk purchase of equivalent Honduras-produced foodstuffs would cost (or its impact on prices, agricultural production, and shortages), but it seems unlikely that local purchase of foods would significantly lower costs. Other possibilities include providing resources for schools to purchase their own food and encouraging families to provide school snacks.

Targeting of merienda within schools is not recommended. Overhead costs are already high, a high proportion of which are associated with getting the food to the school, and the process of selecting beneficiaries and supervision to enforce selection are likely to exacerbate matters. Furthermore, the degree to which the poor are targeted is already quite impressive — nearly forty percent of merienda benefitting households are in the poorest 25 percent of the population.

7.6 Beyond Merienda and Bonos

Both the merienda and the bono program have important positive effects on schooling and income variables. However, they by no means solve either the poverty or the primary school education problems. Bonos make a marginal difference to the income distribution and overall poverty. Even if all the bonos (lps 38,000,000) were directed to the poorest 25 percent of households in the country (about 225,000 households with an average income of Lps 5,097), the average income of that group would increase by only three percent. In schooling terms, even in bono communities, 11 percent of 7-13 year-olds are not enrolled in school and children who are enrolled are still about one year behind ideal rate of academic progress. The problem of poverty probably requires fundamental social and economic changes and the problem of primary school education probably requires more attention to the primary school system in kind.

In order to get children to come and stay in school, it is necessary to make school more attractive and less costly to families. There may be some relatively simple and inexpensive strategies that the school system could adopt to reduce the opportunity costs to families of sending their children to school — e.g., organizing the daily and yearly timetable to take into account the peak periods of demand for child labor. Probably the more urgent task is to improve school quality. It is generally acknowledged that instruction in Honduras primary schools is of low quality, many schools are multigrade or offer less than six primary grades, school infrastructure is poor, and spending on educational materials inadequate (World Bank, 1994).

Rectifying these problems should not only increase the societal returns from that education but also provide an additional incentive for families to send their children to school. In our survey, various characteristics indicative of school quality (age of school, rates of teacher attendance, number of class days, rates of student enrollment) were associated with higher attendance rates in enrolled students.

7.7 Conclusions

Both merienda and bono programs offer important inducements to attend and progress through school.

The bono program achieves these goals much more efficiently.

There are ways in which the bono program's efficiency might be further improved by, for example, focusing on older children.

While the merienda program performs less well in relation to measured schooling and income transfer outcomes it has some advantages over the bono program:

- it provides a well-timed snack in school which is likely to play an important role in improving concentration and school performance;
- it increases the child's overall caloric and protein intake as well as boosting consumption of important micronutrients such as vitamin A; and
- it is probably less vulnerable than the bono program to political pressures.

There is, therefore, still a role for some kind of merienda program. It will be important to explore more efficient ways of implementing the program — including possibly changing the nature and/or sources of the food supplied and reducing freight costs. In particular, the option of centralized food processing appears to be one worth exploring further.

Neither bonos nor merienda programs in their present form are able, on their own, to overcome all the obstacles to school enrollment, attendance and progress. Important gaps remain, some of which may be within the power of the school system to address, others of which will depend on more fundamental economic problems being attacked.

TABLES

CUADRO BMJF-1

PROGRAMA BMJF 1993
CARACTERISTICAS DEL PROGRAMA
ENCUESTA LOCAL Y PROGRAMA NACIONAL

	ENCUESTA LOCAL	NIVEL NACIONAL
PARTICIPACION		
Departamentos	8	9
Distritos	24	105
Escuelas	51	3.478
Beneficiarios	n.a.	205.371
Número de Estudiantes/Escuela	151	n.a.
Número de Beneficiarios/ Escuela	78	59
Número de Familias Beneficiarias/ Escuela	51	n.a.
Número de Beneficiarios/ Estudiante	.52	n.a.
Número de Beneficiarios/ Familia	1.6	n.a.
Número de bonos distribuidos	31.569	1.888.000
Número de días de distribución/escuela	3	n.a.
Número de distribuciones	2.14	n.a.
Tiempo en llegar a la escuela (minutos)	18	n.a.

CUADRO BMJF 2

PROGRAMA BMJF COSTOS 1993 (LEMPIRAS)
NIVEL CENTRAL (ACTIVIDADES E INSUMOS)

	INSUMOS							
ACTIVIDADES	PERSONAL	VIATICOS	SERVICIOS	MATERIALES	ESPACIO	EQUIPO	TOTAL	
IDENTIFICACION DEL BENEFICIARIO	129.216	38.25	7.089	19.873	4.832	20.850	220.110	6,6%
EMISION DE BONOS	14.964	0	0	113.349	17.823	25.450	171.586	5,2%
ELABORACION DE PLANILLAS; CLASIFICACION Y EMBALAJE	60.672	0	49.751	133.824	1.371	1.475	247.093	7,5%
DISTRIBUCION DE ONOS	27.595	34.000	0	7.045	952	18.408	80.000	2,7%
ENTREGA DE ONOS	39.024	0	0	0	1.356	373	40.753	1,2%
ADMINISTRACION	1.360.607	210.973	549.836	168.072	62.702	192.037	2.544.227	76,8%
TOTAL	1.632.078	283.223	606.676	442.163	89.036	258.593	3.311.769	100,0%
	49,3%	8,6%	18,3%	13,4%	2,7%	7,8%	100,0%	

CUADRO BMJF-3

PROGRAMA BMJF COSTOS 1993 (LEMPIRAS)
NIVEL CENTRAL (INSTITUCIONES PARTICIPANTES)

INSTITUCIONES PARTICIPANTES	LEMPIRAS	
PRAF-BMJF	704.549	21%
PRAF-Gastos Generales	2.506.935	76%
Banco Central	43.244	1%
Ministerio de Hacienda	57.041	2%
TOTAL	3.311.769	100%

CUADRO BMJF-4

PROGRAMA BMJF COSTOS 1993 (LEMPIRAS)
NIVEL CENTRAL (BMJF-ESPECIFICO ACTIVIDADES)

ACTIVIDADES	LEMPIRAS	
Identificación del beneficiario	220.11	29
Emisión de bonos	171.586	22
Elaboración de planillas; clasificación y embalaje	247.093	32
Distribución de bonos	88	11
Entrega de bonos	40.753	5
TOTAL	767.542	100

CUADRO BMJF-5

TIEMPO GASTADO POR PERSONAL DE LAS ESCUELAS
EN EL PROGRAMA DE BONOS POR ACTIVIDAD

ACTIVIDAD	HORAS POR AÑO	
CAPACITACION	4	3
IDENTIFICACION DE BENEFICIARIOS	22	18
RELLENO DE FORMULARIOS	21	18
RECOGER BONOS	13	11
ENTREGA DE BONOS	21	18
EXPLICACIONES A LAS MADRES	10	8
LISTADOS DE BENEFICIARIOS E INFORMACION	20	17
OTROS	8	8
TOTAL	120	100

Esta parece ser una estimación razonable. Suponiendo que solo el director participa y que está totalmente ocupado durante los días de distribución (un promedio de 3 al año)= 15 horas al año. En algunas escuelas hay otros profesores que ayudan. Alternativa, si suponemos 10 minutos por familia beneficiaria por distribución nos daría 6x 2.14x10/60 = 21,8 horas, lo cual se acerca al cálculo arriba mencionado.

CUADRO BMJF -6

ANALISIS DE SENSIBILIDAD
EL COSTO DEL TIEMPO INVERTIDO EN EL PROGRAMA DE BONO A NIVEL ESCOLAR (LPS 1993)

	CANTIDAD DE TIEMPO			
	TIEMPO REPORTADO		50% DE TIEMPO REPORTADO	
VALOR DELTIEMPO (Lps/HORA)	12	24	12	24
MANERA EN QUE VARIAN LOS COSTOS				
Tiempo fijo por escuela	5.008	10.016	2.504	5.008
Tiempo variante en proporción al número de bonos	4.296	8.592	2.148	4.296

CUADRO PME-1

CARACTERISTICAS DEL PROGRAMA MERIENDA

A NIVEL DE LA ENCUESTA Y DEL PROGRAMA NACIONAL

	Encuesta local	Nivel Nacional
Departamentos		9
Distritos		111
Beneficiarios		278,796
Escuelas	80	3,464
Estudiantes/escuela	142	n.a.
Beneficiarios/escuela	142	80,5
Ciclos de distribución por año	2	2
Puntos Intermedios de Distribución	8	214
Días de distribución de merienda/ escuela	132	n.a.

CUADRO PME-2

Programa de Alimentación Escolar

Costos a Nivel Central
Lps 1993

	EJECUTADOR			
ACTIVIDAD	MINISTERIO DE EDUCACION (SAEH)	CARE	TOTAL	
Planificación	36.989	85.753	122.742	7%
Distribución	412.237	148.609	560.846	33%
Supervisión	232.446	221.453	453.899	27%
Información	540.56	30.591	84.647	5%
Administración	582.75	397.970	456.245	27%
TOTAL	794.003	884.376	1.678.379	100%
	47%	53%	100%	

CUADRO PME-3

PROGRAMA MERIENDA DE 1993

TIEMPO DEDICADO A LA MERIENDA A NIVEL DE ESCUELA

ACTIVIDAD	HORAS DEDICADAS A LA MERIENDA POR AÑO POR ESCUELA	
Preparación y distribución de comida	125	29%
Supervisión de la merienda	108	25%
Recolectar, descargar almacenar y entregar comida	94	22%
Completar formularios	83	19%
Otros	20	5%
TOTAL	430	100%

PME-4

VALOR DE LAS CONTRIBUCIONES POR ESCUELA AL PROGRAMA DE MERIENDA HECHAS POR LA COMÚNIDAD

ACTIVIDAD	VALOR DE LAS CONTRIBUCIONES COMUNITARIAS POR ESCUELA		
	Total	Excluido el componente de transferencia *	
	Lps	Lps	Porcentaje
Descargue de alimentos	22	22	1%
Distribución de alimentos	33	33	2%
Preparación de alimentos	503	503	25%
Dinero	520	85	4%
Leña	1.341	1.341	68%
TOTAL	2.419	1.984	100%

* Bajo la hipótesis de que se pagaron Lemp. 85/escuela para gastos de transporte y el resto fueron pagos de reembolso a quienes prepararon los alimentos o ayudaron a su preparación de otra manera.

CUADRO SCHL-1

EXPLICACION DE LOS FACTORES UTILIZADOS EN LA ASIGNACION DE LOS PRINCIPALES COSTOS CONJUNTOS

COSTOS DE ASIGNACION	PORCENTAJE UTILIZADO PARA BMJF/MERIENDA	BASADO EN LA PROPORCION DE	OTRAS ACTIVIDADES CUBIERTAS
PRAF ADMINISTRATIVO GENERAL	58.5	Programas especiales de costos	BMI y otros dos programas pequeños de bonos
CARE PROGRAMA ALIMENTOS	35	Alimentación distribuida (peso y valor)	JUNTA y PAMI
CARE ADMINISTRATIVO GENERAL	32 (x35)	Asesorados por la organización CARE	Other programas no alimentarios de CARE
SAEH	70-90	Cantidad de alimentos (91%) Valor de alimentos (82%) No. de escuelas (71%) No. de beneficiarios (68%)	Programa alimentario EEC

CUADRO SCHL-2

ESTIMATES DEL VALOR DEL TIEMPO DE LOS MAESTROS Y MIEMBROS DE LA COMUNIDAD

	Lempiras/hora	Explicación
Directores de Escuela	14	25.000 lempiras de sueldo anual (encuesta WP) 18.000 horas/año (horas recomendadas de trabajo)
	(28)	(25.000 lempiras de trabajo anual) 900 horas/año (horas de enseñanza recomendadas para el Ministerio de Educación)
Maestros	10	18.000 lempiras de sueldo anual (encuesta WP) 1.800 horas/año
	(20)	(25.000 lempiras y 900 horas/año)
Miembros de la comunidad	1.5	Valoración implicita derivada (aproximadamente) de entrevistas en los hogares en el estudio WP

CUADRO SCHL-3

IMPORTANCIA DEL TIEMPO QUE EL PERSONAL DEDICA A LOS PROGRAMAS DE MERIENDA

	BONOS	PROGRAMA DE MERIENDA
Horas que el personal gasta en el programa/año/escuela	120	430
Director	56%	56%
Subdirector	21%	13%
Maestros	23%	31%
Número de personal (enseñanza)/escuela	3,02	3,95
Horas de trabajo/persona/año	1.800 (900)	1.800 (900)
Total de horas de personal/año/escuela	5.436	7.110
Total de horas de enseñanza/año/escuela	2.718	3.555
Porcentaje del total del tiempo del personal dedicado al programa	2,2%	6%
Porcentaje del tiempo de enseñanza dedicado al programa	4,4%	12%

SCHL - 3A
SUMMARY OF THE COSTS OF THE SCHOOL
BONOS AND MERIENDA PROGRAMS (Lps, 1993)

	BMJF		MERIENDA	
	Lps	%	Lps	%
PROGRAM OPERATING COSTS	8,820,089	19	26,425,195	75
central	3,311,769	7	1,678,379	5
intermediate	500000	1	890523	3
local				
Min. Education	5,008,320	11	16,983,717	48
Community	0	0	6872576	19
BONO/FOOD COSTS	38,720,000	81	9,000,000	25
TOTAL SUPPLY COSTS	47,540,089	100	35,425,195	100
Community costs to access the program	622,618		0	

SCHL - 4
SUMMARY OF THE EFFECTIVENESS OF
THE SCHOOL BONOS AND MERIENDA
PROGRAMS IN HONDURAS (1993)

	PROGRAM	
	BMJF	MERIENDA
Number of beneficiaries	205,371	278,796
Lps transfered	37,630,944	18,000,000
Net Lps transfered *	37,630,944	11,127,424
% of children from poor households	86	83
Net lps transfered to poor households	32,362,612	9,235,762
Number of school years gained	335,070	78,000
Number of fewer repeating children	35,540	24,000
Number of additional student class days attended	30,488	0

* Lps transferred minus the value of the community contributions to program operating costs

SCHL - 5
SUMMARY OF THE COST-EFFECTIVENESS OF THE SCHOOL BONOS AND MERIENDA PROGRAMS IN HONDURAS (Lps, 1993)

Effectiveness indicator	Lps per unit of effectiveness	
	Program operating costs	Total program costs
Number of beneficiaries		
BMJF	43	231
Merienda	95	127
Lps transferred		
BMJF	0	1
Merienda	1	2
Number of school years gained		
BMJF	26	142
Merienda	339	454
Number of fewer repeating children		
BMJF	248	1,338
Merienda	1,101	1,476
Number of additional student class days attended		
BMJF	289	1,559
Merienda	0	0

SCHL-6

Distribución de las familias beneficiadas por decil y cuartil

Decil	Total de gastos anuales por familia (lempiras)	Porcentaje de Bono familiar	Porcentaje de Merienda familiar	Cuartiles	Total anual gastos de hogar (lempiras)	Porcentaje de Bono familiar	Porcentaje de Merienda familiar
1	38.648	1	1	1	27.732	14	10
2	21.537	3	5				
3	16.66	5	6				
4	14.241	7	8	2	13.286	14	19
5	11.467	8	9				
6	9.804	10	11				
7	8.078	11	13	3	8.681	19	31
8	7.135	10	12				
9	5.594	20	15				
10	3.844	26	19	4	5.097	52	39
		100	100			100	100

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