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Field Visit in Peru
from November 28 - December 9, 1977
USAID Contract No. OA-C-2217

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EVALUATION OF SCHOOL FEEDING IN PERU

A Report By

New TransCentury Foundation (James M. Pines, Consultant)

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Field Visit, November 28-December 9, 1977

Programa de Alimentacion Escolar (PAE), the autonomous Peruvian school feeding agency related to the Ministry of Health, requested USAID help in planning an evaluation of the nutrition impact of the National Program. The Mission, presently responding to PAE's request for postponement of a scheduled phasing out of donated food, also seeks impact information.

This Report examines some problems in exploring nutrition impact of school feeding in Peru and suggests an alternative to the customary national sample anthropometric evaluation study. The Report proposes a pilot evaluation study in Lima and one other School Feeding Region, including anthropometry and family intake, to improve future programming and execution. Evaluation information will not be available before the end of the 1978 school year (December). It is now too late for useful measurement of children in the current year.

The Report assumes that Food for Peace/Washington will concur with the PAE request that food donations continue for at least three more years. The evaluation proposal described here will be less useful if shipments terminate in 1978, since school feeding will then be severely reduced.

Introduction

Assessment of the nutritional impact of school feeding in Peru requires development of a set of hypotheses expected to be verified through evaluation. These hypotheses flow from project design, implementation and related assumptions about exogenous variables that may influence outcomes. In Peru, initial project hypotheses are vague and project performance deviates substantially from what seems to have been intended. Major exogenous economic changes affecting Peruvian family food intake also complicate the assessment problem.

The Hypotheses

Although improved nutrition is a stated goal of Peruvian school feeding, it is difficult to tell what kind of impact, and how much, was intended. Rations seem to have been set in relation to an average "nutrient gap," but neither substitution or dilution were much considered and that gap underestimates needs of the malnourished. The current programmed ration from PL480 food, sometimes supplemented by community food contributions, includes 372 calories and 9.5 grams of protein, against average requirements of 1,500-1,700 calories and 35-40 grams of protein, set by the Institute of Nutrition, for 4-8 year olds.

Baseline data are not available, but USAID and PAE (Programa de Alimentacion Escolar) staff say that, in the absence of school lunches, many children would receive nothing at midday or, when breakfast is given, would otherwise have no morning meal. If this were true, nutritional impact of the ration might be expected

primarily on energy expenditure rather than weight and height. If the ration is diluted, substitutes for something from home, or is not fully absorbed, net supplementation, and hence nutritional impact, declines. In either case, information about participants' total intake should precede, and may eliminate need for, anthropometric and biochemical assessment of nutrition impact.

Project hypotheses include anticipation of impact on school attendance and on learning, but, to the extent that effects are nutritional, these also involve implicit assumptions about supplementation. Without baseline data, comparisons of participants' total intake with that of similar non-participating groups would be useful, but not conclusive, on substitution. Information about participant intake on non-feeding days, including vacations, might also help.

The school feeding projects assume delivery of the ration on every school day. Hypotheses also contemplate nutrition education of children and parents, including encouragement of school gardens and raising of small animals. The expectation of nutrition impact implies that only malnourished children, or those seriously at risk, will receive rations and the Program includes eligibility criteria intended to bring this about. Younger children, those far from home, and any manifesting malnutrition are to receive priority.

Despite the reservations expressed by many about impact of school feeding, the Peruvian Program, if implemented as planned, might produce measurable impact on nutrition status of some participating children. Available information on program execution

raises serious doubts about both feasibility and value of investigating results at this level.

Obstacles to Measuring Impact

School feeding in Peru has involved negligible collection of baseline or impact data. Current PAE efforts, with studies assisted by the Health Ministry's Dirección de Alimentación, suffer from lack of scales to weigh children and from inadequate resources generally. The fragmentary information now being processed may be helpful, but will not be sufficient for measurement of program impact, even assuming data on comparable non-participants were available. PAE may be able to say what happened to some children in some schools during the 1977 (April-December) school year, but interpretation and attribution will present formidable statistical and analytical problems. Without additional data on total intake, for example, the PAE data can tell little about the effect of school feeding.

Assessment of impact will be influenced, too, by the irregularity of feeding. Although programmed for 167 feeding days, the Program average has not exceeded 122 days for the past four years. Examples of "running out of food" abound, including both delayed shipments from the United States and breakdowns in internal movement of food. Community food contributions also vary widely in regularity and amount. With suspension of school feeding during vacations, the nutrients received through school feeding may not be enough to yield measurable impact, even assuming no substitution effects.

Although no data are available, there is considerable speculation that the Program involves much dilution of rations and field observation confirmed this. Even with regular delivery, the fixed amount of food available for ever-increasing numbers of students tempts teachers to divide the total beyond levels contemplated initially. Younger siblings and ineligible peers join enrolled participants, reducing individual shares, or participants are rotated. The intermittent food shortages compound the problem, adding to diminution of participant intake caused by frequent suspensions of feeding. PAE identified over 900,000 registrants in the Program, with 500,000 rations programmed, suggesting heavy dilution.

Some schools provide breakfast and others offer lunch or a snack. Though the ration is the same, total intake may be affected by the delivery time. Nutrition education, which might influence substitution, is sporadic or unavailable in many schools. The tenuous assumption that participating children consume the full ration as additional intake suffers further from possibilities of preparation loss and plate waste. No evidence on these exists. Poor absorption may also impede nutritional effect of rations consumed.

None of the foregoing considerations is unique to Peru, though their combined consequences may be more serious than in programs with a larger ration and better administration. These problems influence what should be measured, how it can be done, and interpretation of findings. The impact of economic factors, also more serious in Peru, further complicates possible assessment.

Exogenous Variables

The likelihood of nutrition improvement in relation to a given standard, through school feeding in Peru, diminishes when viewed against the country's economic situation. The Mission Economist's Semi-Annual Report for November, 1977, confirms the economic deterioration of the past few years, which shows little sign of abating. Food prices have risen more than other items in the family budget and faster than wages. The price of potatoes, basic staple of the poor, increased by 193% during the past two years. This confirms the comment at page 14 of the Mission's Soy and Corn Project Paper (527-15-130-149) that "the poor have progressively less access to low-cost, high quality food." Monthly surveys by OSPAL, planning arm of the Food Ministry, show constant reduction of family real income and resulting increase in the number unable to afford an adequate diet.

Review of Colombia's food coupon program, during a similar inflationary period, showed that pre-school children in families receiving the subsidy suffered less nutritional deterioration than those without. The program maintained, but did not improve, nutrition status, because of the exogenous economic influences. Similar effects are undoubtedly at work in Peru, further reducing the possibility of significant nutritional progress. One might conceivably discover some statistically significant weight difference between participants and non-participants, but both groups would probably exhibit no more than maintenance of initial status levels. Extensive measurement of children seems less useful than measurement of family intake and intra-family distribution

to identify the extent and form in which school food offsets economic damage. Families may, for example, maintain all childrens' intake at the expense of school program participants, similar to the common result in take-home feeding. Exploration of family intake would also clarify other substitution effects and provide useful information about impact of pre-school feeding on family patterns.

Earthquake and drought also affect the assessment problem. Initial suppositions about local food availability have not been fulfilled and this diminishes adequacy of the school ration as complement for "filling the gap." In Puno, for example, PAE added emergency rations temporarily, to expand school feeding during the recent drought.

The cumulative effect of a fragile hypothesis, damaging exogenous factors, and poor program execution makes assessment of school feeding's national nutrition impact a dubious effort at this time. Current financial problems in PAE also yield this conclusion.

Administrative Limitations

The School Feeding Program (PAE) lacks staff to maintain proper supervision and funds to keep those it has functioning properly. Continued inflation aggravates these problems. Despite serious and informed interest in evaluating impact, the Program could not undertake a reasonable national study without detriment to current operations. Outside financing would reduce the burden, but might better be used to improve execution, including development of routine data collection to simplify future evaluation.

The Program has a small number of people trained to do anthropometry and some schools have ties with health facility staff, but all professionals have other responsibilities. No current socio-economic information on participant families exists and considerable interviewing would be necessary to fill this gap. The Program serves more than 5,000 schools all over the country and Peru's diversity suggests need for a complex and extensive national sample to assess "The Program."

Useful evaluation work, consistent with administrative needs and limitations, should be done in the School Feeding Program. It is a useful delivery system for donated food and community contributions that can be substantial parts of the total nutrient flow to deprived groups. Economic pressures increase significance of these contributions and make their effective use critical to cushioning inflation's impact on families least able to bear it. The following proposal offers a feasible and speedy evaluation program calculated to provide information of maximum value for improving Program effectiveness.

What Can be Done

Evaluation of School Feeding impact will be more useful in Peru if viewed as setting a standard for the future, instead of as recording past nutritional accomplishment. Execution of the project hypothesis, including assumptions about exogenous variables, has been inadequate to test properly the concept involved. Nevertheless, there are Departments and schools where the quality of Program implementation offers high probability of measurable nutrition impact.

The Puno Region, that includes the Department of that name, for example, is widely acknowledged to have the-"best" school program in the country, with regular feeding, school gardens, substantial community support that increases daily rations, and relatively good administration. The Region has done some small impact studies, though no information on them is available in PAE's Lima office. Puno, with wide and serious malnutrition, is a priority area in the national strategy of the Ministry of Food, including a Project for Local Food Development to replace PL480 donations. If School Feeding is not improving nutrition status in Puno, it is highly unlikely that other Departments would show such impact.

By starting evaluation in Puno, PAE would get maximum value from the limited time and resource investment it can make. It may also get useful information for justifying continued Peruvian and American support of School Feeding. School Feeding is likely to continue in Puno, even without U.S. support, and this also justifies the choice. Evaluation in other Departments can continue to emphasize food delivery and other aspects of efficient operation. Health Ministry staff prefer to do an initial study in Lima, for resource and logistical reasons, but accept the idea of Puno as a broader pilot area that could be done simultaneously.

A sampling of the Region's more than 1,200 schools involved in the Program should produce a fair number worth evaluating for nutritional impact. A matching comparison group can, if necessary,

be developed from among non-participating schools, since the area is relatively homogeneous, but this doubling of cost may be avoidable through use of poor performing schools or ineligible pupils within the sample chosen for evaluation. The differences between those receiving food and others may not impair comparison significantly, depending on how eligibility criteria are applied. Differences in the number of feeding days at similar participating schools may also permit useful comparisons, though the study will require concentrated administrative attention to assure that some school programs are executed fully as programmed. This will be especially important in Lima, where dilution is widespread.

Evaluation will have to be longitudinal throughout the school year beginning in April, 1978. It is too late to get heights and weights for the past school year and this alone would have had little value. By measuring all, or a sample of, the children in the schools chosen, just before the term begins, and simultaneously exploring family intake, the assessment will have a baseline for reviewing a) nutrition impact, b) impact on the participants' intake, c) impact on intake of other family members, and d) phasing in of local foods. This baseline will reflect past participation in school feeding by some children and these can be compared with new participants.

Repeating measurements (e.g.) six months later, including examination of family intake patterns and biochemical assessment for a sub-sample, should yield some useful insights about the

role of school feeding in the family nutrition picture. If participants move closer to non-participants on (e.g.) weight-for-height, this might support attribution of nutrition impact.

Examination of total intake would reinforce or negate the Program's role and also clarify exogenous effects such as impact of continued inflation.

This brief preliminary exposition cannot cover the many complicated aspects of study design that are easily thought of. Variations in community food contributions are difficult to track and may influence Program input substantially. Disease patterns, parasite load, and similar influences must be considered. Family food habits reflecting impact of past participation in the Program may have little predictive value for other populations. Nevertheless, even a crude attempt to trace what happens to families when food is distributed in schools will be of great value, regardless of nutritional impact, in a country struggling desperately to weather severe economic difficulties and planning to replace donated food with local production.

An incremental approach, concentrating resources in Lima and Puno, gives other Regions time to improve operations and to institute routine baseline data collection. Logistics become simpler and less costly. By including family consumption, the proposed assessment serves evaluation needs of school feeding and many other activities. Properly carried out, with collaboration of PAE, the National Nutrition Institute, professionals from the Ministry of Health, and research specialists from the Food

Ministry, the assessment can help build a multi-sectoral approach to the understanding and solution of nutrition problems in Peru.

Technical assistance to the Health Ministry's Office of Food Assistance during the visit produced a useful preliminary study design, consistent with participating agencies' capacities and the need to start collecting baseline data during March. The proposed study is not an assessment of past impact, but an attempt to show what a well-executed and feasible school feeding program can achieve. Selected schools will be typical and will receive only inputs contemplated by the Program, though delivered with an efficiency that does not yet prevail throughout it.

Government Food Support to School Feeding

Terms of reference for this assignment also included assessment of "present and future GOP sources of food inputs to the (School Feeding) program." Peru's current economic difficulties simplify this task. With food prices increasing, food imports rising, and the national budget under severe pressure, there is very little possibility of increased GOP food contributions during the next three years. Current levels will be maintained with difficulty, since the PAE budget will not increase and higher transport costs leave less for food at ever higher prices.

Community contributions, the major source of GOP input, are also under pressure since real incomes are declining. The local food can be calculated crudely from reports made by Regional inspectors, but inflation makes valuations of in-kind contributions difficult to interpret. The 3,000 metric tons of

local food programmed by PAE for 1978 had no basis in past measurements. It derived from very rough estimates of a per-child average reflecting subjective conclusions.

The most promising aspect of the GOP food source problem is a project called "Desarrollo Alimentario Local de Poblaciones Rurales Andinas en el Peru" (Local Food Development for Rural Andean Populations in Peru). Presented to USAID during the last week of November, the proposal acknowledges explicitly the Ministry of Food's concern to replace donated food and outlines production plans and distribution mechanisms for doing so.

The Ministry has no funds to carry out the proposed activities and, if other sources respond, it will be at least two years before significant increases in local production occur. The project is, nevertheless, tangible evidence of GOP attention to how phasing in of Peruvian food will occur, a matter seriously neglected when the initial agreement on PL486 termination was signed. Food donations are an inadequate indicator of local participation, because community contributions also include labor, fuel and money.

There are fair records of PAE food purchases, mostly sugar, in the Lima area, but few purchases are made for rural schools. The rural local input can most easily be assessed as part of a routine record-keeping system, but can never be more than a rough estimate. Until PAE Regional and local recording improves, a low priority compared to food delivery and supervision problems, present figures provide an order of magnitude and indication of

interest that are useful for most purposes except assessing phase-out possibilities. With the present economic situation, it is unrealistic to look for any immediate improvement in GOP or local inputs.