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AID/LAC/DR/RD, CHEMONICS INTERNATIONAL, U.S. DEPT. OF AGRICULTURE

AN OVERVIEW OF USAID/BOLIVIA'S FOOD AID PROGRAMS
AND A PRELIMINARY ASSESSMENT OF THEIR RELATIONSHIP
AND CONTRIBUTION TO
IMPROVED FOOD SECURITY

Submitted to
USAID/Bolivia

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**ERRATUM, page 19, first sentence in the first paragraph:
More recent information indicates that the municipal food
for work program (MFFW) that is supported with Title II
food resources is currently operating in over 100 cities and
smaller towns throughout Bolivia.**

PREFACE

The purpose of this report is to provide an overview of the Bolivia Mission's food assistance programs (Titles II and III) and to review and make a preliminary assessment of the contributions that the various elements of the programs are making to the three dimensions of food security - food availability, food access and food utilization. The report also includes a brief assessment of the food security situation in Bolivia and provides a framework for assessing the design and contribution of the Mission's food aid programs to food security. The report is based on information from interviews with Mission staff and with other professionals in the Bolivian Government and the private sector familiar with the Title II and Title III programs, and from descriptive and evaluative reports on various components of the programs and other secondary data.

The paper was written, in part, to help the Mission respond to a request from a GAO audit team for more information on food security in Bolivia and the food security impacts of the Bolivian food assistance program. Bolivia was included as one of the countries in a GAO assessment of AID's progress in implementing Title II and Title III programs under the new food aid legislation (The Agricultural Development and Trade Act of 1990 requires that the Comptroller General evaluate the administrations's progress in implementing Title I (USDA) and Titles II and III (AID) in five countries each, two years after the enactment of the legislation and two years thereafter).

An initial draft of this report was prepared in July 1992 which was incomplete, in that it did not incorporate the results of the assessments of several components of the Title II program (the municipal infrastructure food for work programs and the rural development programs) that were underway at that time nor of the evaluation of the health activities that are funded using Title III generated local currencies that was also underway. The final version of this report, which was completed in January 1993, includes the results of these assessments as well as more recent information on the food security situation in the country and several of the other activities supported by the Title III program that were reviewed in the first draft.

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EXECUTIVE SUMMARY

The lack of food security is a serious problem in Bolivia. For several decades the food supply and population estimates for Bolivia have indicated that total calorie supplies available in the country have not been sufficient to supply each inhabitant with "sufficient food to meet their dietary needs for a productive and healthy life." Other data indicate that poor households, who lack access to the income and/or other resources to produce and/or buy the food that they need, end up with calorie supplies that are much lower than the already low country average. And inadequate knowledge and practice of health care techniques, including those related to nutrition, child care and sanitation, together with the lack of adequate health and sanitation services, means that the right amount and combinations of food are not always consumed and/or utilized even in the event that adequate supplies of calories are available.

Although improved food security is not one of the Mission's five strategic objectives, it is an important cross-cutting issue in the Mission's portfolio. The Mission's overall goal -- to achieve broad-based, sustainable economic growth -- is, in fact, a prerequisite to long-term food security. A.I.D.'s new Policy Determination which provides a "Definition of Food Security" recognizes the importance of broad-based, economic growth to improved food security when it states that "In general, in the poorest developing countries, food security for all is a long-term objective which will be attained mainly through sustained economic growth -- more quickly if it is equitable and broad-based."

A.I.D.'s new Policy Determination also identifies three basic dimensions of food security -- food availability, food access, and food utilization/consumption. All three of these dimensions are part of the food insecurity problem in Bolivia and all three are being addressed under one or more components of the Mission's food aid programs (see Figure). The Title II program deals on a more micro level, channeling food and/or monetary resources from monetization to needy populations through PVO programs. The Title III program works on a more macro level, using food policy conditionality and local currency programming, to support broad food security objectives.

The Mission's food assistance program is wide ranging and complex. Most activities have multiple objectives, and most, if not all, activities can logically

BOLIVIA: THE USAID FOOD PROGRAMS: THEIR RELATIONSHIP TO FOOD SECURITY

	TITLE III	TITLE II	
	POLICY REFORM	LOCAL CURRENCIES	FOOD MONETIZATION
INCREASE FOOD SUPPLY	Reforms in land policy.	Wheat & seed production programs; Alternative dev programs.	Rural development.
IMPROVE ACCESS TO FOOD	Reforms in land policy.*	Alternative dev programs.	Urban FFW; School feeding; Humanitarian aasl. Rural development; Women's econ development.
IMPROVE FOOD UTILIZATION		Community child health; Natl. immunization.	Rural development.

* The balance of payments component also helps the GOB maintain its commitments to the macro and trade policy reforms required for broad-based, sustainable economic growth.

be expected to contribute to improved food security, even though improved food security may not be included as one of their explicit objectives.

There is clear evidence that a number of the Mission's programs are having a positive and significant impact on food security in the country in all three of its dimensions. The wheat production program, for example, which has been financed with Title III local currencies, has already had a significant impact on food availability through increasing the ability of the country to supply a larger percentage of its wheat needs from domestic production. The Title II municipal food for work (MFFW) program, by providing over 150 thousand person months of temporary employment in eight cities and 22 rural towns in FY92, is making a significant contribution to improving the food security of households in areas of high unemployment and poverty. The Mission's food assistance program has also had a positive effect on improved food utilization, through the use of Title III local currencies to support the Government's Expanded Program of Immunizations (EPI) and its communicable disease programs; as a result of this and other donor support, vaccination coverage has improved considerably and the prevalence of vaccine preventable diseases (polio, diphtheria, pertussis, tetanus, measles and tuberculosis) has dropped dramatically.

Additional information is needed to further substantiate and elaborate the food security impacts of these programs as well as other components of the Title II and Title III programs for which even less or no impact information is currently available. This is a particular need with respect to the effects of the programs on improved access and utilization. To accomplish this, more information is needed from improved monitoring and evaluation systems. Progress is being made on the monitoring and evaluation front with respect to both Titles II and III; the Mission is planning to hold a workshop in February 1993 to develop improved monitoring plans, which will include food security indicators, for its Title II municipal infrastructure food for work program, and the Mission has agreed to have a monitoring and evaluation plan in place for its Title III program by the end of 1993. Such impact information will also be needed as a basis for making further decisions as to the relative priorities that the Mission should give to various components of the Title II and Title III programs to enhance the overall impact of these programs on food security.

In the meantime and since improved food security is one of the objectives of the new food aid legislation, the Mission should also consider clarifying its expectations with respect to performance toward improved food security from each of the activities supported by Title II and III resources. The fact that the overall impact of the program should be to improve food security in the country does not mean that all activities supported by these resources have to make a direct contribution to improved food security. On the other hand, many of the activities were designed prior to the new legislation and could benefit from a clarification of their objectives, including by adding an explicit food security objective. The food security impact of the current program might also be enhanced by reassessing (and reallocating resources if the assessment indicates such a step is warranted) whether the various Title II programs are being targeted to geographical areas of greatest need, defined as the poorest areas and/or areas with the worst social indicators and/or the highest rates of unemployment. Poverty maps, which the Government

is in the process of up-dating, could be used in making this assessment. For example, Bolivia's Emergency Social Fund (ESF) found that setting goals for the distribution of its funds based on estimates of relative poverty, first by department and later by province, was an effective targeting mechanism.

IMPROVED FOOD SECURITY AS A CROSS-CUTTING ISSUE IN THE MISSION'S PORTFOLIO

Although improved food security is not one of the Mission's five strategic objectives, it is an important cross-cutting issue in the Mission's portfolio. The Mission's overall goal -- to achieve broad-based, sustainable economic growth -- is, in fact, a prerequisite to long-term food security. A.I.D.'s new Policy Determination which provides a "Definition of Food Security" recognizes the importance of broad-based, economic growth to improved food security when it states that "In general, in the poorest developing countries, food security for all is a long-term objective which will be attained mainly through sustained economic growth -- more quickly if it is equitable and broad-based." The "Food Security Discussion Paper," recently prepared for AID/Washington, also argues that "The principle source of food insecurity is poverty" and that "... the cornerstone of a successful food security strategy is economic development." Furthermore, "Economic development to address food and income insecurity, according to this paper," differs from conventional economic development in being **broad-based and sustainable.**"

A.I.D.'s new Policy Determination also identifies three basic dimensions of food security -- **food availability, food access, and food utilization/consumption.** All three of these dimensions are part of the food insecurity problem in Bolivia and all three are being addressed under one or more components of the Mission's food aid programs.

Each one of these dimensions is important. Countries, for example, cannot achieve food security unless the food supplies available in the country are sufficient to supply every person in the country with an adequate diet -- the supply side. The necessary food supplies can be produced domestically; they can be imported commercially or through concessional aid programs; and, in the short-run, they can be drawn from stocks. Achieving food security also means that households whose members suffer from undernutrition will have to have the ability to acquire sufficient food -- the demand side. Some households will be able to produce sufficient food to feed themselves. Others will have to rely on being able to earn enough money from farm and non-farm activities or through income transfers, food subsidies, etc. to be able to purchase a nutritionally adequate diet. To achieve improved food security, people also have to know what constitutes a nutritionally adequate diet. Access of household members to adequate health services and water and sanitation facilities is also an important component of improved food security if one wants to insure that increased access to food is actually translated into improved health and nutrition.

STATUS OF FOOD SECURITY IN THE COUNTRY

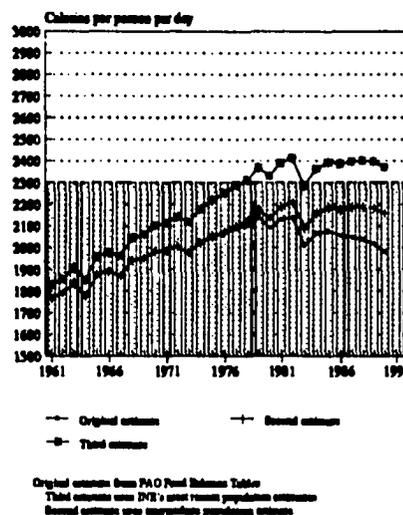
The lack of food security is a serious problem in Bolivia. For several decades the food supply and population estimates for Bolivia have indicated that total calorie supplies available in the country have not been sufficient to supply each inhabitant with "sufficient food to meet their dietary needs for a productive and healthy life", even in the unlikely event that they were to be divided equally among the population. Other data indicate that poor households, who lack access to the income and/or other resources to produce and/or buy the food that they need, end up with calorie supplies that are much lower than the already low country average. And inadequate knowledge and practice of health care techniques, including those related to nutrition, child care

and sanitation, together with the lack of adequate health and sanitation services, means that the right amount and combinations of food are not always consumed and/or utilized even in the event that adequate supplies of calories are available.

INADEQUATE TOTAL FOOD SUPPLIES

More recently, the picture with respect to national per capita food supplies has become less clear. According to food balance sheet data from FAO, the supply of calories in Bolivia in 1990 (the most recent year for which these data are available) was 1,982 calories per person per day. This was over 300 calories per person per day below the 2,300 calories per person per day cut-off point that is used in the new food aid legislation and over 400 calories per person per day below the 2,391 per person per day level that was recommended by FAO (1971). According to these estimates, per capita supplies may have been lower in 1990 than they were at the beginning of the 1980s, a trend which is also worrisome. The per capita calorie average for 1989/90 was 2,000 calories per person per day, for example, compared to the 2,115 per capita calorie average for 1979/80. This has been the scenario that most are familiar with.

BOLIVIA: ESTIMATES OF TRENDS IN PER CAPITA CALORIE SUPPLIES



Results from the Census conducted in the Spring of 1992, however, indicate that Bolivia's population grew much slower between 1976 (when the last census was undertaken) and 1992 than had been expected. This means that country's total population is smaller than the figure that the Government and others had been using as a basis for making per capita estimates. The question is how much smaller. The choice that is made can have serious consequences for Bolivia's development. If INE stays committed to its current estimate (see discussion below) and other institutions such as the UNDP population office and the U.S. Census Bureau accept this number, Bolivia could fail to qualify for its next Title III grant food assistance program. The higher per capita income estimates that will result from using INE's last estimate might also disqualify the country for other concessional assistance programs.

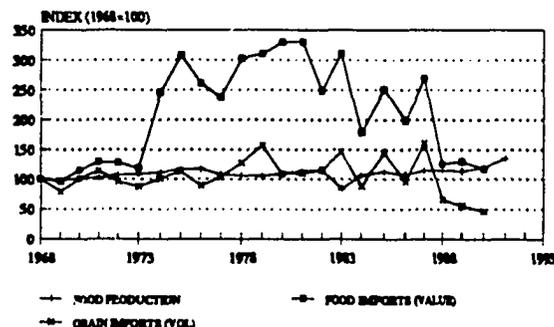
Several months after the Census had been completed but before the rural population data, in particular, had been thoroughly analyzed, a number of analysts were anticipating that the final population estimates for 1992 would be around 7 million -- over 700,000 fewer people than had been estimated based on the 1976 data. If this estimate had been correct, the total population in 1990 would have been around 6.7 million and the per capita calorie supplies would have been closer to 2,158 calories per person per day than the 1,982 calories estimated by FAO. If this scenario were correct, per capita calorie supplies in Bolivia would still be almost 150 calories below the 2,300 calories per person per day cut-off point. And among the major countries that AID works with in the LAC region, only Haiti and Peru would be worse off in terms of per

capita calorie supplies.

More recently INE has settled on an estimate of 6.4 million for the 1992 population -- a number that is over 1.3 million inhabitants fewer than the original estimate. If this estimate is correct, and there are many who still question it, per capita calorie supplies in 1990 would have been 2,372 or 72 calories per person per day above the cut-off point in the food aid legislation. Not surprisingly, the trends in per capita calorie supplies are also different depending on which population estimate is used (see the figure on the previous page). When the original estimate (7.3 million inhabitants in 1990) is used, per capita calorie availabilities appear to have declined in the 1980s. If the intermediate estimate (6.7 million) is used, calorie supplies appear to have stagnated during the 1980s at an average level of 300 calorie per person per day below the cut-off point. If INE's current estimate (6.1 million) is used, per capita calorie supplies grew at a faster rate during the 1960s and 1970s, but also stagnated during the 1980s, however in this case at a level above the 2,300 calorie cut-off point.

With respect to the composition of national food supplies, a decline in the number of calories available from sugar and animal fats accounted for much of the decline in total per capita calorie supplies that FAO estimated occurred over the decade of the 1980s (1979/80 to 1989/90). Calories coming from domestic production increased by over 150 calories per person per day over the decade -- a 10 percent increase. At the same time, calories coming from imports declined by over 250 calories per person per day -- a decline of over 50 percent. In terms of domestic food production, grains contributed the greatest increase in calories while the calories coming from domestic sugar production showed the greatest decline. A decrease in the imports of grains and animal fats accounted for the major share of the decline in imported calories. Bolivia's dependence on imported foods, calculated in calorie terms, declined over the decade from over 20 percent in 1979/80 to approximately 10 percent in 1989/90. On the other hand, Bolivia has also become much more dependent on donated foods for the major source of its imported calories.

BOLIVIA: TRENDS IN PER CAPITA FOOD PRODUCTION AND IMPORTS



SOURCE: FAO, AGRICULTURE AND WORLD BANK TABLES

Bolivia appears to have been one of the more successful countries in terms of having been able to increase food production during the 1980s (Ecuador and Costa Rica were the other two AID-Assisted LAC countries that had positive rates of growth of per capita food production). In Bolivia, the value of total food production increased by over 40 percent during the 1980s (between 1979-81 and 1990) and per capita food production increased by almost 10 percent (using the original population estimates). Of course, if the new population estimates are correct, the increases in per capita food production would have been even greater. These increases,

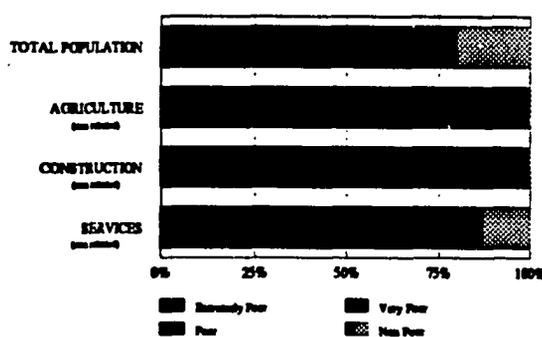
however, were not sufficient to result in increases in calorie supplies per person during the 1980s due to the decline in imported calories. This conclusion holds irrespective of the population estimate used to calculate the per capita calorie supplies.

Performance of the Bolivian agricultural sector could be even better during the 1990s. The first year of the decade of the 1990s was an excellent year for Bolivia's agricultural sector; with almost ideal weather conditions, total food production increased by almost 30 percent over the previous year and per capita food production increased by almost 15 percent. Furthermore, the policy environment at the beginning of the 1990s is much better than the environment that existed at the beginning of the previous decade (see following section for a discussion of the importance of policy for improved food security).

LACK OF ACCESS BY THE POOR TO SUFFICIENT FOOD SUPPLIES

The data on poverty, although sparse, are consistent. A large percentage of Bolivian households have been and continue to be poor; and this poverty prevents them from being able to have access to adequate diets. According to one analysis, which used a food security based poverty criterion and data from the 1976 census, 80 percent of all Bolivian households were poor in the mid 1970s, 40 percent were very poor and 20 percent extremely poor. Households were defined as poor, in this analysis, if their incomes could only cover 70 percent or less of a basket of basic foods. Two sub-categories of the poor were also identified: the very poor who could only afford 50 percent or less of the basic needs basket and the extremely poor who could only afford 30 percent or less. More than 95 percent of the extremely poor were non-salaried persons working in agriculture. And of the non-salaried working in agriculture, 36 percent were extremely poor and the remainder very poor.

BOLIVIA: DISTRIBUTION OF HOUSEHOLDS BY LEVEL OF POVERTY (1976)

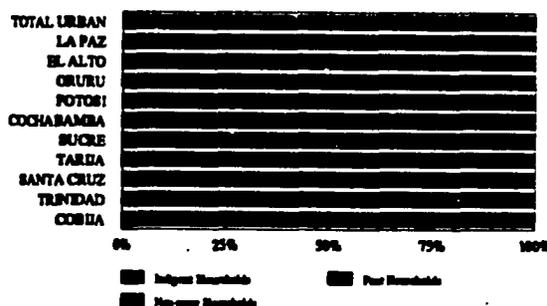


SOURCE: World Bank Poverty Report, 1990

The data needed to update these estimates on a national basis is not available. However, what data is available suggests that it is unlikely that the situation has improved. The World Bank's "Poverty Report," for example, reports that rural incomes appear to have fallen since the 1976 Census, especially in the highlands; that the findings of the 1976 Census that 80 percent of the population earn incomes below the poverty line is not likely to have improved; and that the relative situation of the poorest of the poor has probably gotten worse in rural areas and stayed relatively constant in urban areas. A more recent analysis by the UNDP of levels of poverty in urban areas of the country in 1988 suggests that six out of every ten persons (1.7 million persons) living in the major urban areas of the country are living in poverty, and that every three of these

six persons (831,000) live in conditions of extreme poverty. According to recent calculations made by UDAPSO, using data from INE's integrated urban household survey program, approximately 56-57 percent of Bolivia's urban population could be classified (on the basis of the cost of a nutritionally adequate but minimum cost diet) as living in poverty in 1990. These latter estimates also indicate that the percentage of households in poverty varies significantly by geographical region, with urban poverty levels highest in El Alto and Potosi, followed by Oruru, Sucre and Tarija.

BOLIVIA: DISTRIBUTION OF URBAN HOUSEHOLDS BY LEVEL OF POVERTY (1990)



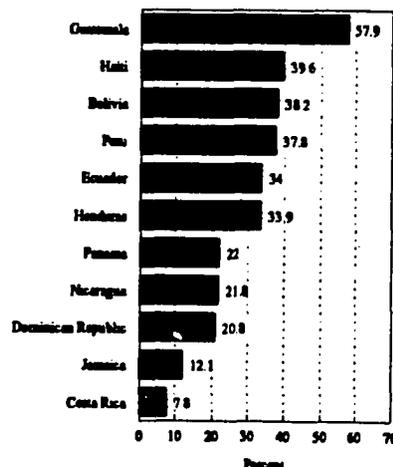
SOURCE: UDAPSO, based on INE Household Survey (not stated) in La Paz and the other Department capitals.

Since different methods were used to make these estimates, one cannot use them to make precise determinations as to how the level and distribution of poverty has changed over time. This problem may soon be remedied, at least for tracking changes in poverty in the urban areas of the country, since UDAPSO has plans to construct its estimates on an annual, or more frequent basis, depending on the availability and timing of the basic data on incomes, expenditures and prices from INE.

POOR HEALTH AND CHRONIC MALNUTRITION

The information available on the health and nutrition status of the population supports the conclusions drawn from the poverty data; that is at the household level, there is no question that a large percentage of Bolivian households are food insecure. The problem of child malnutrition in Bolivia, for example, is very serious, with over 38 percent of children (aged 3-36 months) suffering from chronic malnutrition (i.e., they are stunted or too short for their age). Among the 12 countries in which AID has major programs in the LAC region, only Guatemala and Haiti had higher levels of stunted children.

Prevalence of STUNTED Children (height-for-age)



Source: Data for Bolivia from 1989 DHS survey. Data for other countries from UNICEF/WHO - GRVU 1/92

Wasting (low weight-for-height) is an indicator of acute undernutrition. This is a serious problem in many African countries, but is not a problem among Bolivian children. Low weight-for-age is another indicator that is used to assess the prevalence of malnutrition in a population.

According to this indicator (which is a composite measure which captures both acute and chronic undernutrition) 13 percent of Bolivia's children are underweight for their age -- not good but also

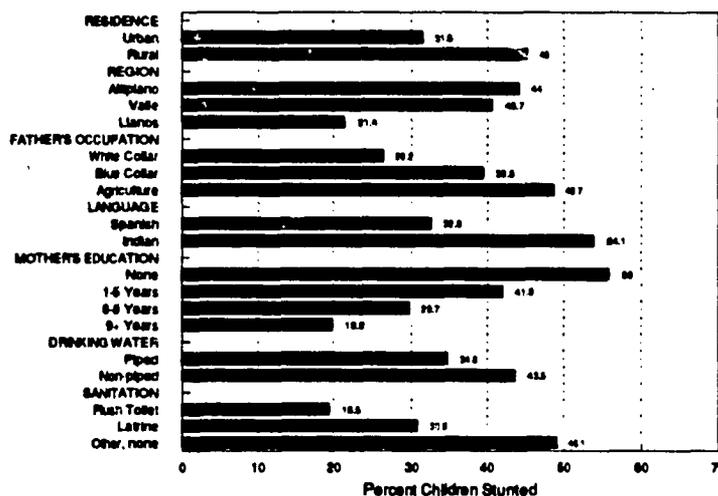
not bad when compared to the levels prevalent in many of the other AID-Assisted LAC countries.

Rural children are much worse off than their urban counterparts, with 45 percent stunted and 16 percent underweight compared with 31 and 11 percent respectively in urban areas. Regional differences are even greater, with children from the Llanos least likely to be stunted or underweight. The Altiplano has the highest rates of stunted (44 percent) and the Valles the highest proportion of underweight children (16 percent). Children whose mothers' speak an Indian language as their primary language are also more likely to be undernourished than children whose mothers' speak Spanish.

Children from lower socio-economic levels are also more likely to be malnourished. Over half (56 percent) of the children whose mothers have received no education are stunted compared with just 20 percent of children whose mothers have attended nine or more years of school. With regard to the fathers occupation, the lowest percentages of undernutrition are found among white collar workers (26 percent) and the highest among those working in agriculture (49 percent).

Other indicators of well-being confirm the severity of the poverty and food insecurity problems in Bolivia at the household level. Life expectancy in Bolivia, for example, was 54 years in 1989, the lowest in all of Latin America and about 13 years below the Latin American average. The rate of infant mortality in Bolivia is 96 deaths per 1,000 live births and the rate of child mortality is 142 deaths per 1,000 children under 5 years of age -- 42 deaths above the cut-off point used in the new food aid legislation. These rates are among the highest in Latin America. Maternal mortality is over 330 deaths per 100,000 live births, which is also among the highest in Latin America.

BOLIVIA: PERCENT OF CHILDREN STUNTED BY SOCIO-ECONOMIC CHARACTERISTICS



SOURCE: DHS Survey, 1989.

Achieving improvements in nutritional levels will require improvements in a number of other factors in addition to food intake, however. Other factors affecting nutritional status in Bolivia include a high prevalence of diseases and the lack of health, water and sanitation facilities, particularly in rural areas. The lack of potable water and poor sanitation facilities are major contributors to poor health and chronic malnutrition. Almost half the children that live in households without modern sanitation facilities are likely to be stunted, compared to 31 percent in households with latrines and 19 percent in households with flush toilets. Yet only 23 percent of households have access to sanitation facilities. More households have access to piped water

(60 percent), however, much of it is still largely non-potable which helps explain why over a third of children living in households with piped water are stunted, although the percentage of stunted children living in households without piped water is even larger (over 40 percent).

CONTRIBUTION OF THE MISSION'S PORTFOLIO TO IMPROVED FOOD SECURITY

The Mission's food assistance programs, as do other aspects of the Mission's programs, contribute to increasing food availability in Bolivia, and to improving peoples access to and ability to better utilize food. The Title II program deals on a more micro level, channeling food and/or monetary resources from monetization to needy populations through PVO programs. The Title III program works on a more macro level, using food policy conditionality and local currency programming, to support broad food security objectives.

BOLIVIA: THE USAID FOOD PROGRAMS: THEIR RELATIONSHIP TO FOOD SECURITY

	TITLE III		TITLE II	
	POLICY REFORM	LOCAL CURRENCIES	FOOD	MONETIZATION
INCREASE FOOD SUPPLY	Reforms in land policy.	Wheat & seed production programs; Alternative dev programs.		Rural development.
IMPROVE ACCESS TO FOOD	Reforms in land policy.*	Alternative dev programs.	Urban FFW; School feeding; Humanitarian asst.	Rural development; Women's econ development.
IMPROVE FOOD UTILIZATION		Community child health; Natl. immunization.		Rural development.

* The balance of payments component also helps the GOB maintain its commitments to the macro and trade policy reforms required for broad-based, sustainable economic growth.

The discussion that follows is organized on the basis of the contribution that the Mission's food assistance program makes to the three dimensions of improved food security -- food availability, food access and food utilization. The contributions of the Title II and Title III programs are clearly distinguished, as are the contributions made by the separate elements of Title II -- direct food distribution and use of funds obtained from monetizing Title II food commodities -- and Title III -- the policy reforms and the programming of the local currencies generated through the sale of the Title III imports. The relationships between the two programs and the three elements of food security are summarized in the above figure. In cases where the programs are too new to have had a measurable impact on food security, the logic of the relationship between the program and improved food security is discussed and the expected outcomes are indicated. In cases where information is available on the actual impact that a component of the program has had on food security, from Mission monitoring activities and/or special evaluations, this also is discussed. Many of the programs discussed contribute to several aspects of food security; in these cases, the program is reviewed under the dimension of food security which logic indicates that it is likely to make the most important contribution.

CONTRIBUTIONS TO INCREASED FOOD AVAILABILITY

Increased Food Imports

The food imported under Titles II and III increases the aggregate amount of food available in the country. This is a short-run effect, but one that is still important because it enables the Government of Bolivia to assure a minimum level of food availability for the population as a whole. And it does this without adding to the Government's still heavy debt burden.

The Title III program alone, for example, enabled the country to import over 150 thousand metric tons of wheat in 1992. This amount of wheat, which was worth over \$22 million, represented approximately 46 percent of the national wheat supply or an addition of approximately 177 calories per person per day if the original population estimates are used (195 calories per person per day if the intermediate population estimates are used and 214 calories per person per day if INE'S most recent estimates are used). The program is scheduled to decline in size to \$20 million a year in FY93 and FY94 as domestic production increases. A program this size should cover the costs of importing 100 to 110 thousand metric tons of wheat, depending on the price of wheat and the shipping costs at the time. This level of imports will still represent a significant addition to the country's overall calorie supplies (118 calories per person per day if the original population estimates are used, 130 if the intermediate estimates are used, and 143 if the newest estimates are used).

Not all in Bolivia are convinced of the positive effects of U.S. and other food donations, however. Wheat imports, in particular, have been seen by some Bolivians to have a longer-term disincentive effect on domestic production by reducing the price that Bolivian farmers get paid for their wheat (also the producer prices for other commodities which are good substitutes of wheat in consumption). Concern with the disincentive effects of imports of milk and edible oils is currently being used by the Government as a reason for preventing the import of these products under the Mission's Title II programs, even though oils, in particular, are much in demand by the participants of these programs and would likely improve their nutritional impact. With respect to wheat imports, the World Bank concluded in its review of the Bolivian agricultural sector that there is no evidence that these imports are having a disincentive effect on domestic production. The Bank suggests that this may have been the case prior to the initiation of the Government's economic reform program in 1985/86, when some wheat imports were financed with "cheap dollars" at the overvalued official exchange rate, and donated wheat was sold by the Government to the mills at subsidized prices. Even then, the Bank argues, the primary effect of the Government's policies was to provide subsidies to the country's wheat millers, who had access to underpriced wheat, and not to reduce the market price of wheat to producers or consumers.

This outcome is precisely what one would expect to happen given the fact that throughout this period, wheat was imported on a commercial as well as preferential basis. This meant that the market price for wheat was determined by the marginal cost of supplying the market with the marginal unit (i.e. the marginal unit of commercial imports) which were valued in accordance

with world prices. Currently the domestic price of wheat is determined by the marginal price of importing wheat from Argentina, the lowest cost supplier. The price of wheat for most of the domestic production in Santa Cruz is negotiated with the mills in Cochabamba and Santa Cruz based on the import parity price of Argentinean wheat imports. And it is this price that is also used to determine the pricing of Title III wheat imports, along with the calculation of the FOB price plus transportation and handling costs.

Increased Domestic Wheat Production

U.S. wheat donations, in other words, are not currently having a negative impact on the Bolivian agricultural sector or on domestic wheat production. In fact, the program has had just the opposite effect; that is the wheat production program, which has been financed with Title III local currencies, has already enabled the country to supply a larger percentage of its wheat needs from domestic production.

The results of the Title III wheat production program are impressive (see Table 1). The original project goal for 1990 was 20,000 hectares of wheat harvested, while the actual area harvested was over 30,000 hectares-- 50 percent above target. The average production yield estimate was 1.0 metric tons/hectare, and the actual yield was 1.6 metric tons/hectare-- 61 percent above target. And the estimated total production was 20,000 tons compared to the actual production of 48,951 tons -- 140 percent above the target. In fact, the program came close to achieving the area planted and production goals established for the final year of the project in the first year of the project (30,000 hectares harvested in 1990 compared to the 39,000 hectares projected for 1994 and 48,700 metric tons produced compared to the 60,800 projected). In

TABLE 1: PLANS AND RESULTS TO DATE OF THE WHEAT PRODUCTION PROGRAM

		Number of Hectares	Yield per Hectare (MT)	Production (MT)
1990	Planned	20,000	1.00	20,000
	Actual	30,219	1.61	48,951
1991	Planned	23,000	1.15	26,400
	Actual	36,614	1.32	48,330
1992	Planned	27,500	1.27	34,950
	Actual	63,917	1.51	96,514
1993	Planned	32,000	1.38	44,200
1994	Planned	39,000	1.56	60,900

terms of yields per hectare, the 1.61 tons/hectare was actually higher than the 1.56 tons/hectare yield projected for 1994. Results in 1991 were also far above expectations. These production results have also meant that the country has also been able to reduce its imports of wheat from Argentina. This has already resulted in significant savings of foreign exchange, U.S. \$9.7 million in 1990, according to Mission estimates, and U.S.\$10 million in 1991.

The weather did not cooperate in 1992, however, which meant that total production was less than had been projected given the area planted. Even so, the area actually planted (over 60,000 hectares) was twice what had originally been projected, production was more than double original projections, and yields were over 20 percent higher. Unfortunately, the excessive rains also adversely affected the quality of the grain harvested which meant that a third of the total wheat production had to be sold for animal feed (31,725 metric tons) because its moisture content was too high for milling into flour. Since last years setback is the type of problem that agriculture is always subject to, the results of this program should still be judged as excellent.

In fact, CIMMYT, in its 1991 evaluation of the program, concluded that the program was "creative, interesting and successful" and that "in addition to the economic benefits of the program to the Bolivian society, there is much to be learned from the experience." According to CIMMYT, four elements were key to the success of the program. First was the determination that wheat could be grown in the Santa Cruz area during the winter season in rotation with soybeans. The earlier expansion of soybeans as a summer crop in the Santa Cruz area provides land and machinery infrastructure with practically zero opportunity costs to be used for the wheat crop in the winter. Second was the fact that primary responsibility for implementing the program was given to a private farmers' organization, ANAPO (Asociation de Productores de Oleaginosas y Trigo), which works in concert with other public and private organizations in the region, including the Center for Tropical Agricultural Research (CIAT) and the wheat millers. Third was the fact that the program was developed within a liberalized market framework; that is the price of wheat in Santa Cruz is based on the international opportunity cost of imported wheat from the cheapest source, CIF Santa Cruz. And fourth was the development of a successful action program which includes a research component implemented by CIAT; a seed production and distribution component coordinated by ANAPO; a technology transfer component implemented by ANAPO; a mechanism for pricing wheat involving farmers and millers; and lines of credit for grain and seed production and for financing wheat purchases by millers.

The current wheat program is being funded with Title III local currencies under the auspices of the PL480 Title III Executive Secretariat, as was an earlier food production oriented project which was undertaken in other areas of the country in addition to Santa Cruz and included other food commodities in addition to wheat. The current project began in 1990 and will run for five years. Approximately U.S.\$3.6 million in local currency funds will be assigned to this program over the three year life of the current PL-480 Title III program (see Tables A-1 and A-2 for more information on the amounts of local currencies available from Title III programs since FY91 and how they were distributed among different types of program activities). Significantly, the amount of funds to be made available to this program are planned to decline over the life of the current Title III agreement in recognition of the success and ultimate self-sustainability of the program.

The original idea was to produce enough wheat in the Santa Cruz area to be able to satisfy the demand for wheat generated within the region. It is clear now, given the success of the program, that the potential for the program goes beyond that of import substitution for Santa Cruz alone. Since wheat is produced in rotation with soybeans, the amount of soybeans under cultivation sets an upper limit on the area that can be devoted to wheat. With the land seeded to soybeans averaging more than 150,000 hectares per year since the beginning of the 1990s, and assuming

a wheat yield of 1.5 metric tons/hectare, the total amount of wheat produced in the Santa Cruz area could be in excess of 225,000 metric tons per year, or more than double the amount of wheat produced in 1992 and over three times the amount of wheat originally projected to be produced in 1994, the last year of the project. This is in contrast to the demand for wheat in the Santa Cruz area which is estimated to range from 80,000 to 88,000 metric tons per year.

On the other hand, these gains, although impressive, do not mean that Bolivia will be able to eliminate its need for wheat imports at any time in the near future. For example, the amount of wheat produced in the Santa Cruz area in 1992 represents less than 30 percent of total domestic demand, which is currently estimated at 350,000 metric tons. Expanding the land area in Santa Cruz under wheat production to its maximum could produce enough wheat to cover over 50 percent of domestic demand. On the other hand, domestic demand for wheat will also continue to grow, not only in line with population growth, but at an even faster rate in response to the increased demand for wheat products on the part of Bolivia's rapidly growing urban population.

Support to the Design of a New Land Policy

In the process of designing the policy component of the Mission's current Title III program, an assessment was made of the policy constraints to achieving broad-based economic growth in general and to growth in the agricultural sector in particular. Bolivia was unique among the AID-Assisted countries in the LAC region in that it had already taken major steps as early as 1985/86 to eliminate most of the price distortions in its economy through macro and trade policy reforms. Furthermore, although there were still some macro policy reforms needed related to longer-term issues of growth, Bolivia had already committed itself at the time the current Title III program was being designed to most of the necessary reforms under ESF, IMF, World Bank and Inter-American Development Bank programs.

With respect to agriculture, these reforms have had the effect of removing the economy-wide price interventions that have discouraged agricultural growth and the sustainable use of natural resources in the past. The reforms made in trade and price policies have also provided agriculture with a more level playing field vis a vis the other sectors of the economy. Problems of land tenure, lack of infrastructure and low levels of technology as well as poor weather conditions continue to constrain agricultural development, however. The amount of investment required to overcome the infrastructure problems of the agricultural sector, particularly rural roads, is beyond the scope of the USAID program, although the USAID does provide considerable assistance in this area under its alternative development program and the proposed Rural Roads for Alternative Development project. Assistance is also being provided in agricultural technology development and transfer by the World Bank as well as under the USAID's alternative development program.

The market for agricultural land, however, was the one area that had not been touched by the Government's liberalization program, although major reforms had been introduced liberalizing product, labor and financial markets. Land tenure in Bolivia is insecure and this has deep economic, social and environmental consequences. Land transactions are few, and land has low

economic value. Land is not put to its best use, and there is no automatic adjustment of farm size to factor prices. Credit to and investment in the agricultural sector are minimal. Long-term soil conservation aspects of land management are neglected. Despite the Agrarian Reform of the early 1950s through which peasants received small parcels of land, rural poverty remains acute, with signs of declining incomes. For many the problem lies in the 1953 Agrarian Law which introduced tight regulations on sales, purchases, rental and mortgaging of agricultural land. These restrictions, it is argued, act as a major constraint to investment and growth in the agricultural sector as well as to the sustainable use of Bolivia's natural resources. Others believe that the real problem lies in the technical and administrative problems that plague the land titling process and that many of the legal and constitutional restrictions can be circumvented. Both groups, however, view land tenure problems as being one of the most serious constraints to achieving sustainable growth in output (food as well as non-food products) in the agricultural sector. Reforms in Bolivia's land use policies are also expected to have a positive effect on the incomes of small farmers by giving economic value to what is their major asset.

In other words, the decision was made to concentrate the policy reform component of the Mission's Title III program on encouraging legal, regulatory and institutional changes affecting land tenure and land markets and the management of natural resources and the environment. This strategy was adopted even though the effects of these policy reforms will not be felt during the life of the current agreement, because these were seen as major constraints to agricultural growth as well as improved equity/access in the longer-run and because other important policy reforms that can be expected to have positive food security impacts in the shorter-run were already underway. Under the policy reform component that was selected, the Mission will encourage the Bolivians to develop a new legal structure for land ownership that will encourage, including by providing incentives for investments in land improvements, the Bolivians to make more sustainable use of their natural resource base. These initiatives are expected to encourage agro-forestry, improved silva culture and farm practices that will assure food security in the medium-term for large sectors of the population without destroying the natural resource base needed for long-term food security. This issue is quite sensitive, however, and much will need to be done to design an appropriate new legal structure as well as to develop the support throughout the country that will be needed to get such a new law passed through Congress.

CONTRIBUTIONS TO IMPROVED ACCESS TO FOOD

Support to Policies that Promote Broad-based, Sustainable Economic Development

The balance of payments component of the Title III program (along with the Mission's ESF program), by providing the Government with additional foreign exchange, also helps the Government maintain its commitment to the macro and trade policy reforms that were responsible for turning the economy around in 1985/86 as well as to broaden and deepen these reforms. Policies and program to promote economic growth are of major importance in the Bolivian context. Not only is Bolivia still one of the poorest countries in the LAC region, in terms of per capita GDP, but it also faced one of the most serious economic crises of any of the countries in the region -- a crisis which culminated in 1985 with an economy in chaos, hyperinflation, a

foreign exchange crises, a substantial budget deficit, and a real GDP that had declined every year since 1981.

The economic situation took a dramatic turn around in 1985 as a result of the New Economic Policy that was adopted by the new Government that took office that year. Bolivia's stabilization and structural adjustment program, in fact, was one of the most ambitious in the developing world. Among the more important policy reforms were the following: the Boliviano was devalued by 93 percent in 1985, the exchange rate was unified, and a procedure was introduced for determining the official exchange rate through daily auctions held by the Central Bank; public sector management was improved by imposing substantial budget deficit reductions; subsidies were eliminated, public expenditures were reduced, new taxes were imposed and the administration of taxes was rationalized; virtually all restrictions on imports were eliminated and import duties were substantially lowered and their range reduced (a flat rate of 10 percent is assessed on all imports with the exception of capital imports which are assessed at 5 percent; product and factor markets were also substantially liberalized through the elimination of price controls, the elimination of interest rate ceilings and an almost complete opening of the economy to international capital flows, and the re-establishment of contracting in the labor market to give it greater flexibility; and progress was made toward reducing the size of the public sector.

What is notable is that the Bolivian program contains most of the elements that most economists and major international development institutions now consider to be a prerequisite for promoting economic development. This consensus was described in an October 1991 issue of *The Economist* as including the following elements:

... a non-inflationary macroeconomic policy, based on modest budget deficits and prudent monetary policy; greater openness to trade and foreign investment; and greater reliance on market forces as allocators of resources, especially in industry and agriculture.

A.I.D.'s "Food Security Discussion Paper" also stresses the importance of supportive public policies as a prerequisite for broad-based, sustainable economic growth. Among the more important policies identified in this paper are: a supportive, stable macroeconomic and legal environment; an institutional system of property rights with official commitment to respect for private property; fiscal responsibility; monetary restraint; a competitive environment in which monopoly power of public or private firms and where natural monopolies are regulated as necessary; foreign exchange is properly valued, and the economy is open to foreign trade and investment and as free as market distortions as is possible consistent with environmental protection and the collection of taxes to support essential functions.

Enabling Bolivia to maintain its commitment to these reforms has major significance for the future well-being of Bolivia's poor, including for their food security. Ultimately, improvements in the food security of the poor in Bolivia depend on them being able to increase their productivity, employment and incomes so that they can afford better diets. To begin with, the well-being of the poor could not improve under the kind of chaotic economic environment that

existed in Bolivia prior to 1985. Nor is the well-being of the poor likely to improve in an environment in which economic growth is stagnant. Growth, however, also has to be broad-based, if it is to have a significant effect on the employment and incomes of the poor. Bolivia's reforms, because they were designed to eliminate price distortions in the economy and to encourage increased private sector investment, were expected to increase the demand for labor in the country and thereby contribute to the reduction of poverty and food insecurity.

Although it has required several years, the Bolivian economy finally appears to be responding to the new economic incentives created by the macro and trade policy reforms begun in 1985. In 1991, for example, Bolivia's Gross Domestic Product (GDP) grew by over 4 percent with the result that GDP was the highest that it had been since the 1970s. And growth in the agricultural sector was a major contributor to the overall growth of the economy. This year (1991) was the best year for the agricultural sector in two decades, with value added in agriculture increasing by 7 percent over the previous year. Preliminary estimates for 1992 are that value added in agriculture will be down -1.5 percent from 1991. While 1991 was a good year for the agricultural sector with respect to the weather, 1992 was a bad year -- too little rain in the Altiplano and too much rain in the eastern part of the country. Even so, agricultural sector performance in 1992, although below 1991, is still above 1990 levels.

Much of the initial growth in the economy has come about as a result of the reallocation of existing resources to more productive alternatives. To get a sustained increase in growth over the longer-term, levels of investment, particularly private sector investment, will also have to increase. This also seems to be happening; in 1992, for example, private sector investment in the economy (domestic as well as foreign) increased by 50 percent. Apparently it took a number of years of commitment to the policy reforms on the part of two governments before investors felt confident enough in the country's commitment to these reforms to increase their own longer-term commitments.

Recent economic performance has also had positive effects on levels of unemployment in the country. Government figures based on households surveys by the country's statistical institute (INE) indicate that open unemployment in La Paz and the other nine capital cities has declined from 10.2 percent in 1989 to only 5.8 percent in 1992. There are many who believe that these estimates are too low, but none argue with the direction of the trend. The rapid growth of the economy in the last two years supports the conclusion that the numbers of those employed have increased. The fact that the leading sector in the economy in 1992 was the construction sector (preliminary estimates are that it grew by some 15 percent), also suggests that the numbers of additional jobs created have been even larger than might otherwise been expected given the preliminary estimate of overall GDP growth (3.8 percent); this is because the construction sector in Bolivia is one of the most labor intensive.

Increased Production of Alternative Food and Export Crops

The Title III program will also contribute to improved food security through the provision of local currencies to support the Cochabamba Regional Development Program. The objective of

this project is to develop sources of income and employment alternatives to coca in the Department of Cochabamba and its areas of influence. One of the components of the program focusses on increasing the production of basic foods for local consumption (corn, wheat, rice, yucca, vegetables, and potatoes); another focusses on improving the incomes of farmers in this area through support given to the production of crops other than coca for export (bananas, pineapples, citrus fruit, tumeric and ginger). Both should have a positive impact on the food security of households in the region. Resources will also be used to improve local infrastructure in the region to improve the marketing of agricultural products. Approximately U.S.\$26.6 million in Title III local currencies will be assigned to this program which represents 54 percent of the U.S.\$49 million total for the three years of the program (see Tables A-1 and A-2).

According to a recent survey of rural households financed in part by Title III local currencies, there are 529,473 people in 112,148 rural households in the Department of Cochabamba; 100,896 are estimated to live in the non-coca growing area, and 11,252 in the coca growing region. Roughly 90 percent of this target population lives in the highlands and valleys and 10 percent in the tropical lowlands. The population is younger (over 44 percent of the population is estimated to be 14 years old or younger) and it is growing faster than had been expected; this means that jobs and reliable sources of income will have to be created at a faster rate than previously anticipated in order to draw people away from coca. The fact that the survey found that the average net income of households in the coca growing areas is over five times that of households in the non-coca growing areas suggests that the magnitude of the problem of finding alternative sources of income competitive with coca may also be greater than anticipated.

Improving food security for the households in this area will require more than just increasing jobs and incomes. Results of the survey also indicated that the majority of rural households in the region lacked access to potable water (less than a quarter of all rural households, for example, have access to a public or private water tap or pump), and the percentages of children vaccinated successfully against Diphtheria, Pertussis and Tetanus (DPT) and Polio is quite low. When survey respondents were asked what they perceived their greatest needs to be, improved access to and availability of water was the need expressed by the largest number of people interviewed, followed by access to improved health care. In other words, the ability of households to utilize food properly biologically is constrained by lack of potable water and sanitation and lack of access to health services (Mission food assistance activities that are directed more specifically to improved food utilization are discussed in the final section of this report).

Support to Rural Development Programs in Poorer Rural Areas

The Mission also provides support through Title II monetization allocations to three private voluntary organizations (PVOS) to work with poor rural households to increase their production of crops for home consumption and sale. This is a relatively small program (less than U.S.\$1.5 million in U.S.\$ in FY93) divided among three PVOS -- Food for the Hungry International (FHI), the Seventh Day Adventist Development Relief Agency (ADRA) and Catholic Relief Services (CRS)/CARITAS. The program uses only monetization funds, in part because when food rations were used in the pre-FY92 rural infrastructure program they were thought to have acted as a

disincentive to rural community self-help (See Tables A-3 and A-4 for a more detailed picture of the amount of Title II food and monetization funds that have been made available pre-FY92 and in FY92 and FY93 to different program types).

The FHI program, according to a recent USAID sponsored evaluation by MBA, is the strongest of the three. FHI works in 179 poor rural communities in eight provinces in the Departments of La Paz, Oruro and Potosi. Its major emphasis is providing technical assistance and training to approximately 3,600 families in these rural areas to increase the production of food for their own use. FHI, according to the evaluation, has a very successful program of constructing potable water wells and micro irrigation systems and greenhouses, which have enabled these households to begin producing vegetables for their own consumption, which heretofore had been a problem in the highlands. FHI also works very closely with the Ministry of Health to provide child survival services to these households, which includes oral rehydration, health and nutrition education and immunization campaigns. The MBA evaluation concludes, based on interviews in the field with FHI field personnel as well as participant farmers, that the program has been a very successful for poor farmers and has had a substantial impact on improving their living conditions.

Support to Safety Net Programs

A recurring theme in A.I.D.'s "Food Security Discussion Paper" is that food security has two principal components at the national level:

- (1) broad-based, sustainable economic progress relying on the private sector under supportive public policies to raise most people out of income and food insecurity and (2) targeted food and other transfers to those who lack resources and income or other means for food security.

In the case of Bolivia, it was recognized from the beginning that the Government's economic reforms would require time to take effect and that in the meantime, many poor households would be adversely affected. For this reason, special programs were developed in the country to provide a safety net for poor households. The World Bank took the lead in this effort, but USAID programs also provided assistance. In late 1986, for example, an Emergency Social Fund (ESF) was established with World Bank assistance with the objective of alleviating the harmful social effects of the structural adjustment program. The ESF was designed as a temporary institution, under the assumption that the unemployment problems would have been reduced sufficiently by 1989 to terminate the program. Since this did not happen, a new program called the Social Investment Fund (SIF) was established in early 1990 with the mandate to alleviate poverty and increase investment in health and education. The ESF, which financed labor intensive infrastructure projects and social assistance programs, financed some 3,300 projects involving the disbursement of U.S.\$192 million over the life of the program. The SIF plans to commit approximately U.S.\$40 million each year beginning in 1991 for projects that provide basic health care, nutritional development programs, formal primary education, and informal short-term training programs for adults in areas with the highest incidence of acute poverty.

The USAID currently provides in food the equivalent of approximately U.S.\$14 million to support to labor intensive infrastructure development projects and social assistance programs through its Title II program. This program, which has been functioning in Bolivia for 30 years, has been, until recently, limited to and justified entirely in terms of distribution of food to poor people, whether under "ordinary" or "emergency" conditions. Since, 1986, however, the Mission has tried to gradually shift the program to a more developmental focus, and in September 1991 the Title II strategy was further redefined in order to integrate the program more fully with the objectives of the Mission's overall development assistance program.

The Title II program as currently conceived, supports three of the Mission's strategic objectives - Alternative Development, Democratic Initiatives and Family Health. A fourth, unique objective, which is mandated for the food aid legislation, is improved food security. Another result of the new strategy has been a major shift of Title II resources to municipal infrastructure projects from traditional school feeding, maternal and child health (MCH) centers and mothers' clubs. As a result of past experiences, the Mission also decided to increase the amount of Title II foods to be monetized and to concentrate the use of the food donations in specific project types (e.g., humanitarian assistance and school feeding) where food works well and to provide only monetization resources to other types of projects (e.g., rural development and women's economic development) where money has proven to be a more efficient resource than food.

The current program contains seven program types -- school feeding, other child feeding, humanitarian assistance, municipal infrastructure, rural development, mothers' clubs/child survival, and women's economic development. This represents a mix of activities that are justified on different grounds -- some are old, some are new, some are being increased and others are being phased out. Operationally, the program is implemented by four private, voluntary agency sponsors -- Catholic Relief Services/CARITAS, the Seventh Day Adventist Development Relief Agency (ADRA), Food for the Hungry International (FHI) and Project Concern International (PCI). The large numbers of program types, implemented by different sponsors and on the basis of different justifications, has increased the complexity of the program and made it more difficult to manage. This should be a temporary phenomenon, however, with the burden of managing the Title II program easing as transition to the program envisioned in the new Title II strategy is completed. For example, the fact that over 70 percent of the food resources will go to support municipal food for work programs (MFFW), which in themselves are self-targeting to the poor (see discussion in the following section), should make it simpler for the Mission to manage the program.

In theory, most if not all of the Mission's Title II programs should be contributing to improved food security in one way or another:

Humanitarian Assistance -- The humanitarian assistance program can be seen as a pure safety net program, i.e. it is a straight transfer of food to those who lack the income or other resources to be able to provide for their own food needs. Food made available under this program has historically gone to orphanages, homes for the elderly and soup kitchens for the poor. Under the Mission's new strategy, the amount of food devoted to the humanitarian

assistance component of the Title II program will decrease slightly in FY93 from pre-FY92 levels (see Tables A-3 and A-4). In addition, some of these resources will be directed to vulnerable populations (pregnant and lactating women and children under five) that will no longer be served under the mother's clubs programs (the reason for the switch from support to mother's clubs is discussed in a following section).

School Feeding -- The school feeding program is viewed more as a developmental program than a safety-net program, although to the extent that it is targeted to poor children in poor areas of the country it also has elements of a safety net program. The major purpose of the program, which is a top priority of the Bolivian Government, is to increase enrollments and reduce attrition rates in elementary schools in Bolivia. The program is also justified on the basis of providing a means for improving the nutritional status of school children. The program can be viewed as contributing to improved food security in both the short and longer-run. Increasing individuals' levels of education, should increase their employment options and their overall income earning capabilities as adults and thereby contribute to their and their families food security in the long-term. One would also think that, in the short-run, providing children with food at school would also have a positive impact on their food security and nutrition. In fact, some have argued against using Title II foods in school feeding programs because they have not resulted in a measurable difference in the growth rates of the children participating in the programs. One reason for this lack of measurable impact is that the food distributed at school may not represent a net addition to the student's diets. In situations where families are very poor, the food in the household that would have gone to the student if he/she were not participating in the school feeding program may be shared among other family members. In this case, the food security of the family is improved, even if the individual student participant has not benefitted by as much as might have been expected by not taking family dynamics into account.

The amount of food commodities going to school feeding programs in FY93 will be almost double the pre FY92 amount (5.5 thousand metric tons in FY93 compared to 2.8 thousand metric tons pre-FY92)(see Tables A-3 and A-4). Much of this increase will go to rural areas; the nutritional problems of children in the rural areas are more severe than those in urban areas and the enrollments in primary education are lower. As an example of the magnitude of the impact, during FY92, over 138,000 students per month received food under this program. The CARITAS program reached an average of 59,652 primary school children in 1,629 schools in eight of the nine Departments of Bolivia. The FHI school feeding program reached a slightly larger number of students (78,716) in 1,210 schools in more concentrated geographical area in the Altiplano (La Paz, Oruro and Potosi). A recent evaluation of the FHI program concluded that their School Feeding program was having a measurable impact on the drop out rate among students -- decreasing it by at least 35 percent. They also concluded that the program was helping to alleviate hunger and improve the nutritional intake of the students, although this conclusion was more subjective.

Municipal Infrastructure Development -- The bulk of the food resources under the Mission's new Title II strategy -- 71 percent in FY93 -- will go to support a municipal food for

work (MFFW) program (see Tables A-3 and A-4). This program was initially designed in 1986 in response to the economic emergency and related stabilization and structural adjustment programs in order to provide a "safety net" to protect the poor against the consequences of structural adjustment. The program was successful and is now seen as an important part of the Mission's Alternative Development strategy: that is the temporary employment provided by this program is seen as contributing to reducing migration to coca producing areas as well as continuing to provide a safety net for the Government's structural adjustment policies. The program is also seen as giving poor neighborhoods access to municipal decision making to construct needed social infrastructure and to obtain social services in their neighborhoods, thus supporting the Mission's Democratic Initiative strategic objective. The municipal food for work program should also increase property values in these poor neighborhoods and potentially will improve the tax base of the municipalities and the central government.

The program currently operates in 8 major cities and 22 rural towns country-wide. In 1992, it created over 150 thousand person months of temporary employment. The CRS/CARITAS program created

employment for an average of 8,000 workers per month in five major cities and 28 rural towns. And the ADRA program created temporary employment for an average of 9,000 workers per month in five cities and four rural towns. Together these two programs have also been responsible for the completion of an impressive number of infrastructure projects (see Table 2).

TABLE 2: NUMBER OF MUNICIPAL INFRASTRUCTURE PROJECTS COMPLETED IN FY92 BY TYPE OF INFRASTRUCTURE

TYPE OF INFRASTRUCTURE	NUMBER OF PROJECTS
Streets and roads	920
Potable water and sewage systems	147
Garbage collection services	44
Irrigation channels	73
Storm drainage canals	22
Forestation	143
Water tanks	31
Latrines	165
Parks and plazas	74
Other community infrastructure	555

In theory, the Mission's urban food for work program can be linked to improved food security in two major ways. As a payment for work completed, participants in these municipal infrastructure programs receive food which adds directly to the food security of the workers and their families, i.e. the program helps reduce the access constraint of poor households in the event that the households

participating in the program are, in fact, poor. The food for work program, by helping improve basic sanitation conditions in the poorest neighborhoods, also contributes to improving the health of the population in the area which also contributes to improved food security through improving the biological utilization of food (see discussion below).

In fact, public works programs, when they pay at or below minimum wages, are self-targeting to the poorest households. A recent assessment of the income and employment effects of Bolivia's ESF (Emergency Social Fund) using detailed household survey data is only one of a number of studies that have documented this relationship. Paying workers in food, which is the practice in the majority of the Title II programs, if anything, increases the probability of targeting to the poorest households. Other programs such as those run through schools, maternal and child health centers and mother's clubs would have to use some type of additional targeting mechanism such as an income-based means test or a nutritional status cut-off point, in addition to locating the programs in areas with higher concentrations of poverty, in order to concentrate the resources on the households in greatest need.

On the other hand, these MFFW programs do not include explicit food security or nutrition objectives, although improved food security is a specific objective of the new food aid legislation. Furthermore, the relationships between improved food security and the development of municipal infrastructure are perhaps not as clear to many people as are the relationships between improved food security and the more traditional programs; these latter programs after all are perceived as providing food directly to groups thought to be particularly vulnerable -- to children through schools and to women of child bearing age and infants and young children through health centers and mother's clubs. For these reasons, USAID/Bolivia decided that it was important to make a more careful assessment of what was really happening to the participants in their MFFW program to insure at the very least that these programs were not doing damage to participants food security and nutrition.

This evaluation, which was undertaken in 1992 by the Education Development Center (EDC) in 1992, concluded that the MFFW program "has protected the many participants against deterioration of their food security and nutrition status." The Bolivia Mission, according to the evaluation, "has taken the lead world-wide, with its efforts to improve the food security and nutrition impacts of its UFFW [urban food for work] Program." The evaluation also suggested that the "Bolivia Program merits high marks and, with more attention to food security and nutrition, will deserve even higher."

To this end, the evaluation also identified ways in which the food security effects of the MFFW projects could be improved. Specific recommendations, several of which the Mission has already begun implementing, included investing in tools to improve worker productivity, increasing the value of the ration and reducing the tasks that workers are expected to perform to qualify for rations so that they have more time to seek other more permanent employment, and adding child care centers for women workers. The nutrition and food security consequences of MFFW programs can also be increased, the evaluation concluded, if programs better target: (1) low-income areas and communities and (2) public works by type (e.g., potable water and sanitation

facilities) and location. Although employment and income goals may sometimes conflict with food security and nutrition goals, the evaluation concluded that in most cases, project designers should be able to meet both sets of goals. Project design and selection can also influence the food security and nutrition impacts of a MFFW program. Public infrastructure projects, the evaluation concluded, are likely to have a greater positive impact on food security if they benefit workers in some way that is in addition to the wage (food ration) that workers receive. Examples include projects that are undertaken in workers' own communities; projects that increase worker productivity, so that worker compensation, physical output or both can be increased; projects that offer training and link FFW groups with other social development organizations so that some progress can be made in improving participants longer-term income earning potentials.

Mother's Clubs -- The mother's clubs program has traditionally been directed toward overcoming the nutritional problems of women of child bearing age and children under five years of age. A number of studies financed by USAID/Bolivia in 1990, however, indicated that mother's clubs were not meeting their traditional objectives, nor were they able to successfully take on a more developmental focus. To begin with, there was wide-spread criticism of the use of food in mother's clubs on the ground that it created dependency. Indeed, food was seen more and more as "getting in the way" of assisting the women participants become more self-sustaining. The evidence also did not support the contention that the program was having an appreciable impact on the nutritional status of vulnerable groups. Furthermore, the mothers' clubs appeared to be an increasingly inappropriate vehicle for increasing income generating opportunities for women. As a result of this analysis, the Mission decided to phase out of mother's clubs in its new strategy, and as a result the amount of food being devoted to support mother's clubs has declined drastically, from over 40 percent in pre FY92 to only 2.2 percent in FY93 (see Tables A-3 and A-4).

CONTRIBUTIONS TO IMPROVED FOOD UTILIZATION

Access of households to adequate health services and water and sanitation is also essential if increased access to food on the part of the poor is to be translated into improved health and nutrition. Adequate amounts of clean water, effective environment sanitation, hygienic household practices, the control of disease vectors, and utilization of health services all contribute to improved health and nutrition. Conversely, conditions that increase exposures to health risks increase the chances of malnutrition. Diarrheal diseases, measles, acute respiratory infections, tuberculosis and, more recently, Acquired Immunodeficiency Syndrome (AIDS) have major impact on nutritional status. Among the most nutritionally significant parasitic infestations are malaria, hookworm, ascaris, amoebiasis and schistosomiasis.

Improved Community Health Services

In this vein, the Mission also supports a number of activities that are designed to improve the health services that are available, to poor households in particular, which should contribute to improved health status and improved nutrition (through the improved biological utilization of food). Local currencies generated under the Title III program are being used to provide counter-

part to support the Mission's Community and Child Health project (U.S.\$4.4 million will be used for this purpose over the life of the current, multi-year Title III program) (see Tables A-1 and A-2). The goal of this project is to improve family health in Bolivia and the project purpose indicators

TABLE 3: IMMUNIZATION COVERAGE OF CHILDREN LESS THAN ONE YEAR OF AGE, 1980, 1986-91

YEARS	PERCENT OF CHILDREN COVERED			
	OPV3	DPT	MEASLES	BCG
1980	13	12	16	--
1986	26	23	21	24
1987	28	24	33	32
1988	39	26	42	28
1989	49	39	47	28
1990	50	41	53	49
1991	66	58	73	67

include reductions in infant, child and maternal mortality. The project includes several components which have direct implications for improved food security and nutrition, including diarrheal disease/cholera control; immunization program support; Ministry of Health district development which is an important component of improving community-level, primary health care; and national Chagas disease control.

A portion of the non-counter-part local currencies generated through Title III commodity sales (U.S.\$2.7 million over the life of the current Title III program) will continue to be made available to support the immunizations program carried out by the Ministry of Health which is in addition to the support from the Community and Child Health project. This includes the Expanded Program of Immunizations (EPI), control of tuberculosis, rabies control and malaria and other vector control. A recent evaluation of PL480 Title III support to these activities concluded that measurable progress had been made over the past decade in all of these areas of communicable disease control through the direct assistance of Title III resources as well as through UNICEF, Rotary International, the USAID directly, PAHO and others. Vaccination coverage improved considerably during the 1980s and the prevalence of vaccine preventable diseases (polio, diphtheria, pertussis, tetanus, measles and tuberculosis) dropped dramatically (see Tables 3 and 4). Improved health brought about as a result of the EPI, the evaluation concluded, contributed to the Mission's child survival strategy and complements the nutrition component of food security.

On the other hand, this evaluation also stressed that the Ministry of Health will continue to need technical and financial support just to maintain the current level of effectiveness of the program and that additional attention needs to be directed toward strengthening the integration of these components into a comprehensive communicable disease program. It is unlikely that the additional resources to support these recommendations will be forthcoming, however, given the

increased demands that are being put on the Title III local currency resources.

Improved Water and Sanitation

Improving environmental sanitation and making more and cleaner water available can have a high impact in a relatively short-period of time on health and nutrition by reducing exposure to disease. Lack of potable water and sanitation is an important problem in Bolivia, as was previously indicated;

that is, the most recent household survey data indicates that only 60 percent of Bolivian households have access to piped water, much of which is still largely non-potable, and only 23 percent of households have access to sanitation facilities. A major component of the Mission's Community and Child Health project, which receives counter-part funds from the Title III program, focusses on improving water availability and sanitation. Planned outputs of the project include, for example, improving water and sanitation facilities in over 100 communities. Improvements in community water supplies and sanitation are also one of the outputs of the Mission's Title II municipal infrastructure (MFFW) programs and its rural development programs.

NEXT STEPS

The Mission's food assistance program is wide ranging and complex. Most activities have multiple objectives, and most, if not all, activities can logically be expected to contribute to improved food security, even though improved food security may not be included as one of their explicit objectives.

As previously indicated, there is already clear evidence that a number of the Mission's programs are having a positive and significant impact on food security in the country in all three of its dimensions. The wheat production program, for example, which has been financed with Title

TABLE 4: NUMBER OF CASES OF VACCINE PREVENTABLE DISEASES, 1979-1991

YEARS	POLIO	DIPHThERIA	TETANUS NEONATAL	PERTUSSIS	MEASLES
1979	443	25	125	1746	4365
1980	43	28	153	2370	3565
1981	10	11	144	3944	6279
1982	10	24	91	1388	720
1983	7	49	111	1445	2034
1984	--	25	43	1393	1279
1985	--	30	43	944	217
1986	4	15	42	571	346
1987	4	16	48	385	975
1988	2	9	80	685	1818
1989	2	11	93	705	778
1990	--	4	42	105	751
1991	--	1	22	17	41

Source: MOH Department of Epidemiology, 1992.

III local currencies, has already had a significant impact on food availability through increasing the ability of the country to supply a larger percentage of its wheat needs from domestic production. The Title II urban food for work (UFFW) program, by providing over 150 thousand person months of temporary employment in eight cities and 22 rural towns, is making a significant contribution to improving the food security of households in areas of high unemployment and poverty. The food assistance program has also had a positive effect on improved food utilization, through the use of Title III local currencies to support the Government's Expanded Program of Immunizations (EPI) and its communicable disease programs; as a result of this and other donor support, vaccination coverage has improved considerably and the prevalence of vaccine preventable diseases (polio, diphtheria, pertussis, tetanus, measles and tuberculosis) has dropped dramatically.

Additional information is needed to further substantiate and elaborate the food security impacts of these programs as well as other components of the Title II and Title III programs for which even less or no impact information is currently available. This is a particular need with respect to the effects of the programs on improved access and utilization. To accomplish this, more information is needed from improved monitoring and evaluation systems. Progress is being made on the monitoring and evaluation front with respect to both Titles II and III; the Mission is planning to hold a workshop in February 1993 to develop improved monitoring plans, which will include food security indicators, for its Title II municipal infrastructure food for work program, and the Mission has agreed to have a monitoring and evaluation plan in place for its Title III program by the end of 1993. Such impact information will also be needed as a basis for making further decisions as to the relative priorities that the Mission should give to various components of the Title II and Title III programs to enhance the overall impact of these programs on food security.

In the meantime and since improved food security is one of the objectives of the new food aid legislation, the Mission should also consider clarifying its expectations with respect to performance toward improved food security from each of the activities supported by Title II and III resources. The fact that the overall impact of the program should be to improve food security in the country does not mean that all activities supported by these resources have to make a direct contribution to improved food security. On the other hand, many of the activities were designed prior to the new legislation and could benefit from a clarification of their objectives, including by adding an explicit food security objective. The food security impact of the current program might also be enhanced by reassessing (and reallocating resources if the assessment indicates such a step is warranted) whether the various Title II programs are being targeted to geographical areas of greatest need, defined as the poorest areas and/or areas with the worst social indicators and/or the highest rates of unemployment. Poverty maps, which the Government is in the process of up-dating, could be used in making this assessment. For example, Bolivia's Emergency Social Fund (ESF) found that setting goals for the distribution of its funds based on estimates of relative poverty, first by department and later by province, was an effective targeting mechanism.

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APPENDIX A

TABLE A-1: DISTRIBUTION OF BOLIVIA'S TITLE III LOCAL CURRENCIES BY PROGRAM TYPE
(Thousand U.S. Dollars)

TYPE OF PROGRAM	FY90	FY91	FY92	FY93	FY94	FY92-94
ALTERNATIVE DEVELOPMENT	7200	8500	9650	8500	8500	26650
Counterpart	6500	8000	8500	8000	8000	24500
Non-counterpart	700	500	1150	500	500	2150
NATURAL RESOURCES/ENVIRONMENT	800	800	2800	2090	2090	6980
Counterpart	0	0	1500	1500	1500	4500
Non-counterpart	800	800	1300	590	590	2480
FOOD PRODUCTION/MARKETING	5900	4700	2200	720	690	3610
Counterpart	0	0	0	0	0	0
Non-counterpart	5900	4700	2200	720	690	3610
OTHER AGRICULTURE	2100	2000	250	250	280	780
Counterpart	0	0	0	0	0	0
Non-counterpart	2100	2000	250	250	280	780
HEALTH	2700	2700	2800	2140	2140	7080
Counterpart	1000	1500	1600	1400	1400	4400
Non-counterpart	1700	1200	1200	740	740	2680
PROGRAM ADMINISTRATION	1300	1300	1300	1300	1300	3900
TOTAL	20000	20000	19000	15000	15000	49000

SOURCE: Numbers for FY90 and 92 were obtained from Executive Secretariat reports. Estimates for the current FY92-94 multi-year program come from the signed agreement. The categories used in this analysis do not correspond exactly with those used in either the current or the past two agreements. "Alternative Development" is treated as a separate category, as it is in the current agreement, and includes funds in the FY90 and 91 programs identified as counterpart for the Chapare and for campesino scholarships. "Natural Resources/Environment" is also treated as a separate category, as it is in the current agreement, and includes activities identified as "Support to protected areas" in the FY90 and 91 programs. "Food Production and Marketing" is treated as a separate category because of the direct relationship between the activities included and increased food availability. Activities related to the wheat program, the production of seeds and "Sustainable agriculture" (in the FY90 and 92) agreements are included in this category. Another category entitled "Other Agriculture" was created to cover activities designed to provide more generalized types of support to the agricultural sector, commercial agriculture in particular. Finally, health activities are given a separate category.

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**TABLE A-2: DISTRIBUTION OF BOLIVIA'S TITLE III LOCAL CURRENCIES BY PROGRAM TYPE
(Percent)**

PROGRAM TYPE	FY90	FY91	FY92	FY93	FY94	FY92-94
	(Percent)					
ALTERNATIVE DEVELOPMENT	36.0	42.5	50.8	56.7	56.7	54.4
Counterpart	32.5	40.0	44.7	53.3	53.3	50.0
Non-counterpart	3.5	2.5	6.1	3.3	3.3	4.4
NATURAL RESOURCES/ENVIRONMENT	4.0	4.0	14.7	13.9	13.9	14.2
Counterpart	0.0	0.0	7.9	10.0	10.0	9.2
Non-counterpart	4.0	4.0	6.8	3.9	3.9	5.1
FOOD PRODUCTION/MARKETING	29.5	23.5	11.6	4.8	4.6	7.4
Counterpart	0.0	0.0	0.0	0.0	0.0	0.0
Non-counterpart	29.5	23.5	11.6	4.8	4.6	7.4
OTHER AGRICULTURE	10.5	10.0	1.3	1.7	1.9	1.6
Counterpart	0.0	0.0	0.0	0.0	0.0	0.0
Non-counterpart	10.5	10.0	1.3	1.7	1.9	1.6
HEALTH	13.5	13.5	14.7	14.3	14.3	14.4
Counterpart	5.0	7.5	8.4	9.3	9.3	9.0
non-counterpart	8.5	6.0	6.3	4.9	4.9	5.5
PROGRAM ADMINISTRATION	6.5	6.5	6.8	8.7	8.7	8.0
TOTAL	100	100	100	100	100	100
	(Thousand U.S. Dollars)					
TOTAL	20000	20000	19000	15000	15000	49000

SOURCE: See Table A-1.

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TABLE A-3: CHANGES IN THE COMPOSITION OF BOLIVIA'S TITLE II PROGRAM BY PROGRAM TYPE (Million U.S. Dollars)

	FOOD ALLOCATIONS (000MT)			MONETIZATION ALLOCATIONS (MILLION U.S.\$)		
	Pre FY92	FY92	FY93	Pre FY92	FY92	FY93
SCHOOL FEEDING	2.8	5.6	5.5	0.0	0.0	0.0
OTHER CHILD FEEDING	0.6	0.6	0.8	0.0	0.1	0.1
HUMANITARIAN ASST	1.9	2.1	1.7	0.0	0.0	0.0
MUNICIPAL INFRASTRUCTURE	10.9	20.8	21.3	0.1	0.2	0.7
RURAL DEVELOPMENT	4.4	0.0	0.0	0.9	1.5	1.5
MOTHER'S CLUBS/CHILD SURVIVAL	16.1	9.0	0.7	0.2	0.3	0.3
WOMEN'S ECONOMIC DEVELOPMENT	0.0	0.0	0.0	0.0	0.3	0.3
TOTAL	36.7	38.1	30.0	1.2	2.4	2.8

SOURCE: USAID Records.

TABLE A-4: CHANGES IN THE COMPOSITION OF BOLIVIA'S TITLE II PROGRAM BY PROGRAM TYPE (Percent)

TYPE OF PROGRAM	FOOD ALLOCATIONS (Percent)			MONETIZATION ALLOCATIONS (Percent)		
	Pre FY92	FY92	FY93	Pre FY92	FY92	FY93
SCHOOL FEEDING	7.6	14.7	18.2	0.0	0.0	0.0
OTHER CHILD FEEDING	1.6	1.6	2.8	0.0	4.2	2.8
HUMANITARIAN ASSISTANCE	5.2	5.5	5.7	0.0	0.0	0.0
MUNICIPAL INFRASTRUCTURE	29.7	54.6	71.0	8.3	8.3	25.0
RURAL DEVELOPMENT	12.0	0.0	0.0	75.0	62.5	51.1
MOTHERS' CLUBS/CHILD SURVIVAL	43.9	23.6	2.2	16.7	12.5	10.6
WOMEN'S ECONOMIC DEVELOPMENT	0.0	0.0	0.0	0.0	12.5	10.4
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
TOTAL	(000 Metric Tons)			(Million U.S. Dollars)		
	36.7	38.1	30.0	1.2	2.4	2.8

SOURCE: USAID Records.