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AN ASSESSMENT OF THE INCOME, FOOD SECURITY AND NUTRITION CONSEQUENCES OF URBAN FOOD FOR WORK IN BOLIVIA

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ii.

LIST OF ACRONYMS

Accion Comunal	Municipal Department of Community Action
ADRA	Adventist Development and Relief Agency
A.I.D./the Agency	United States Agency for International Development
AID/W/FHA	A.I.D. Bureau for Food and Humanitarian Assistance
AID/W/R&D/N	A.I.D. Office of Nutrition, Bureau for Research and Development
Alcaldia	Municipality
APWF	Wheat Flour (Title II Commodity)
ARD	Agriculture and Rural Development Office
Caritas	Caritas/Boliviana
Convenio	Agreement between a Municipality (Alcaldia) and a cooperating sponsor to implement a UFFW program in that municipality
CSM	Corn-Soy Mixture (one of the Title II commodities)
EDC	Education Development Center, Inc.
FDM	Fondo de Desarollo Municipal
FFW	Food for Work
FY	Fiscal Year
I SALT	Iodized Salt (Title II Commodity)
kcal	Kilocalorie, a unit of energy
MCH	Maternal and Child Health
MT	Metric Ton (equals 2,000 US pounds)
MYOP	Multi Year Operating Plan
NGO	Non Governmental Organization
OFINAAL	Oficina Nacional de Asistencia Alimentaria
PL480	Public Law 480 specifying U.S. Food Aid Policy
RFFW	Rural Food for Work Program
SFB	Soy Flour Blend (Title II Commodity)
SFCM	Soy Fortified Corn Meal (Title II Commodity)
UFFW	Urban Food for Work Program
USAID/Bolivia	USAID Mission to Bolivia
VOIL	Vegetable Oil (Title II Commodity)
WFP	World Food Programme, administered by the United Nations
WINS	Women and Infant Nutrition Field Support Program

iii. EXECUTIVE SUMMARY

This Report assesses the food security and nutrition consequences, income impact, and commodity ration adequacy of the USAID/Bolivia Urban Food for Work Program (UFFW), at the request of the Mission's Agriculture and Rural Development Office.

Since its inception in 1986, UFFW in Bolivia has intentionally focused, with great success, on creating employment and infrastructure, not on nutrition or food security. Therefore, it is not surprising that the Study finds much room for improving UFFW's food security consequences. This Report does not single out the Bolivia program for criticism, but uses it as representative of the relative lack of attention to food security in UFFW programs worldwide.

CONTEXT: Bolivia is a food deficit country with an overall malnutrition rate of 35.5% and a daily per capita calorie shortfall of about 300 kcals. This Study was done in the context of the Mission's strategic shift toward "alternative development," to help Bolivia move to a diversified economy not dependent on coca. In support of this reorientation, USAID/Bolivia's PL480 Title II strategy has shifted from nutritionally oriented (e.g. MCH) distributions, to FFW activities that create temporary employment and urban infrastructure, convey transferrable job skills, and reinforce privatization and the Democratic Initiative. The monetization of Title II commodities in Bolivia has also risen from 9,075 MT in 1989 to 17,498 MT programmed for FY 1992, with much of the increase going to support UFFW activities.

Congress' 1990 Amendments to PL480 require that all food aid be used to help achieve food security, defined by AID (Policy Determination 19, April 13, 1992) as: "When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life." Congress' concern, plus the recent changes in Bolivia's Title II programming, make it especially important to examine the food security and nutrition implications of FFW in Bolivia and, at the very least, to assure that use of Title II commodities does not damage food security and nutrition. By requesting this Study, the Bolivia Mission has assumed a leading role in helping the Agency meet the food security and nutrition concerns of Congress.

METHOD: Bolivian UFFW Projects do not include explicit food security or nutrition goals. Therefore, to review these effects, the team developed a conceptual framework with the following components:

1. Calculation of the NET additional food (or income equivalent) provided through UFFW, after subtracting:

a) increased energy costs associated with the work
b) costs of tools, clothing, sponsor fees, worker transportation, and commodity storage and transport
c) losses arising from sales of commodities at discount prices
d) costs of reduced breastfeeding and/or costs associated with increased use of health services
e) wages or other income lost from accepting FFW employment.

2. Assessment of changes, associated with net income gains, in food habits, expenditure patterns, breastfeeding and other child care, earning capacity arising from skill development, and community involvement.

3. Identification of long term consequences associated with sustainability of completed projects, increased income, and new community or individual behaviors resulting from UFFW programs.

The team also reviewed all aspects of UFFW, to identify program changes that would increase food security and improve nutrition, without jeopardizing primary program goals. For these purposes, the key indicators of nutritional and food security outcomes are: a) the net addition to family income from FFW, and b) the extent of increased food consumption (the net addition effect) resulting from this increase.

INDIVIDUAL PROGRAMS

The three projects examined differ with regard to size, target population, level and type of compensation, and project design. The largest, in EL ALTO, employs approximately 6,000 workers and is run by ADRA in conjunction with the Municipality. About 90% of the participants are very poor women, organized into groups of 30-50 for construction of sewers, roads, and curbs. They receive one ration for 16 days work and, because the ration is the primary source of family consumption, these FFW workers consume virtually all the commodities they receive. However, the significant caloric and economic costs associated with participation in the program reduce the net addition to family income and food access to a level that requires review.

Caritas administers a much smaller project, employing 250-300 workers, with the municipalities of COCHABAMBA and seven provincial cities. The target population is unemployed heads of household, in this case about 80% men (mostly displaced miners), who are engaged primarily in street paving and collecting raw materials required for these works. Ration earnings are not limited, and most take home about two and a half rations per month, for approximately 20 days of family work. These FFW participants, who are better situated than those of El Alto, sell or barter part of their rations to meet their cash needs.

The Municipality of SANTA CRUZ operates, with ADRA help, an UFFW project that includes a component for large-scale infrastructure, mostly roads and drainage canals, and another for small-scale community-based projects. Large projects are implemented by private construction firms, who pay unskilled laborers the minimum daily wage of 12 Bs, including up to 45 % in the form of Title II commodities. The 2,369 workers, almost all male, are indistinguishable from other commercial laborers and move freely from UFFW to other work. The Municipality, the construction firms and most workers agree that, while UFFW provides additional wages for infrastructure construction, money wages would be more efficient and less burdensome.

The small-projects component provides small commodity incentives to community groups whose project submissions have been approved. Work is at the community's convenience and less disciplined than in the other component. Community projects frequently include women workers. If money were transferred from the small-projects component to the component for large infrastructure, and commodities transferred in the opposite direction, effectiveness of the Title II commodities would be increased. (In FY 92, 2,000 MT were programmed for the large projects and 1,000 MT for small projects.)

Despite the qualifications and reservations expressed regarding food security consequences of the UFFW Program, the Bolivia program makes very positive contributions both at community and national levels. UFFW established, and has achieved, goals of temporary employment to provide a safety net, and infrastructure construction. By establishing outstanding institutional frameworks and operating systems in Food for Work, USAID/Bolivia has prepared the way for a longer-term, non-emergency approach that will make UFFW an outstanding contributor to the food security of Bolivia.

Impact of UFFW on National and Community Food Security: FFW can improve local food security, when migration does not exceed the volume of commodities received by enough to reduce per capita food availability. In Santa Cruz, for example, where the population grew by 6 % in 1991, receipt of 1,200 MT of Title II commodities kept per capita food availability from being even lower. This is an important contribution to community food security, but is manifested primarily through tiny additions to many individual families, rather than in any visible change. Similar conclusions follow for the national level, where UFFW commodities increased Bolivia's food security by providing a net addition of 8,045 MT in 1991 to national food availability. This helps buffer Bolivia's average daily 300 Kcal per capita consumption shortfall.

The UFFW program is an especially effective vehicle for enhancing food security in two other respects. First, as the Study survey and interviews make clear, UFFW improves direct access to food, because virtually all of the commodities paid as wages in UFFW will be consumed by nutritionally vulnerable people, as soon as modest program changes are made. In El Alto, participants already consume most of the rations received. Second, urban programs improve food security indirectly, through the impact of water and sanitation infrastructure

improvements on family health and nutrient utilization. Roads built with the assistance of Title II commodities contribute to general economic development, ultimately the most critical factor in improving national food security.

Because the commodities monetized or distributed in the urban program are not produced in significant amounts in Bolivia, the risks of disincentive effects are minimal. Unfortunately, the Bolivian Government's concern for disincentive effects has led to the elimination of oil from the program, despite the unanimous desire of UFFW workers for its return.

THE LEGACY OF RURAL FOOD FOR WORK PROGRAMS

The three UFFW projects reviewed in this Study, while very different from one another, all stem from the well-established and successful rural FFW model. However, when this rural model was applied for new purposes in a different context, it produced unanticipated outcomes that reduce effectiveness of the entire urban Program.

FFW began as a stimulus to community development, providing a modest and clearly supplementary incentive for participants working on projects of direct benefit to themselves. In 1986, however, the availability of Title II commodities and the changes brought about by structural adjustment policies to the economy, combined with early FFW success and the need for infrastructure, led to the use of FFW in larger projects (such as roads and sewers), requiring much more work, often far from the workers' communities. Rations continued to be viewed as a supplementary "incentive" when, in reality, they were now serving as wage-equivalents for near-full time employment -- an outcome never intended by the Program.

The current UFFW program fails to distinguish between the traditional model and the new urban projects, though their food security consequences differ dramatically. Where the ration is a modest but useful supplement, the result is a brief increase in family food security. But when the incentive-level ration becomes the mainstay of family diets, and FFW participants are left little time to earn other income, there is scant improvement in the food security of individual families, even though the program benefits a large total number of families.

IMPROVING INCOME, FOOD SECURITY, AND NUTRITION CONSEQUENCES OF URBAN FOOD FOR WORK

This Study shows that the three Bolivian UFFW models have very different consequences for nutrition, food security, and income, due to their program variations. Based on these findings, the Report now presents a more generally applicable framework for designing and assessing the food security and nutrition implications of FFW projects throughout the world.

Targeting: The nutrition and food security consequences of FFW can be enhanced if programs target 1) low-income areas and communities; 2) the poorest workers; and 3) public works, by type (e.g., sanitation facilities) and location. Although employment and infrastructure goals may sometimes conflict with food security and nutrition concerns, in most circumstances project designers should be able to meet both sets of goals. This Study demonstrates clearly that the food security impact of UFFW can best be achieved in Bolivia by paying food wages to lower-income women, without increased costs to the program, and without sacrificing infrastructure output.

Adequacy of Ration Size and Commodity Composition: The ration size required to provide temporary food security depends on the money, time, and caloric energy available in the household to supplement the FFW ration. More important than the size, composition and nutrient content of the ration are a) the time and energy required to perform the tasks set for earning it, and b) the number of rations per month that a family is allowed to earn. Because the program is currently providing only a very modest addition to family resources for most participants, over what they could earn outside the program, stability of the temporary UFFW employment, rather than any significant increment to family income or food security, was the program's principal appeal.

If the UFFW Program continues to employ people almost full-time, even on a temporary basis (so that the ration is practically the sole source of family food), then workers must be able to earn enough food to meet family needs. Alternatively, the Program must reduce the time required to earn the current ration, so that families have enough time left to earn other income to supplement the ration. The Program could also link opportunities to earn more than one ration to family size, nutritional needs, and family income.

Selection and Design of Projects: When infrastructure projects contribute to public health and general economic development, they are strengthening food security and nutrition as well. To maximize their contribution to food security, however, infrastructure projects should be selected and designed with the following criteria in mind:

* They should benefit workers directly, whenever possible (e.g. participants should work on projects within their own communities).

* They should increase worker productivity, so that worker compensation, physical output, or both, can be increased as well. Ways to improve productivity without sacrificing other goals, include investing in tools (of special importance in the El Alto project), developing or improving skills, child care, nutritional supplementation on the job, group incentives, and training.

* They should incorporate non-technical interventions with potential to improve family food security (e.g., by reducing food costs and improving health conditions). The surest approach is by paying food wages primarily to women (at least in cultural contexts like

that of Bolivia, where women control food and men control cash income); however, the level of compensation must be sufficient to provide a significant net addition to family food availability. In Bolivia, possibilities include enlisting social workers, *promotoras* and FFW groups in development activities; and assuring that equal work receives equal pay, both within and between projects.

* They should generate sustainable income and food security impacts. With the advent of the new "wage payment" urban model, improving workers' conditions offers the best possibility for sustainable impact, as a substitute for the direct permanent benefits received from many early community-based FFW projects. Options include creating "job ladders," offering training, and linking FFW groups with other social development organizations.

RECOMMENDATIONS

The following recommendations incorporate suggestions for improving the food security and nutrition impact of UFFW projects in Bolivia. Many of them apply equally well to all FFW projects, whether urban or rural, in other countries as well. Where a particular recommendation applies with special force to El Alto, Cochabamba or Santa Cruz, that is noted.

The specific suggestions that follow emerge from an all-inclusive recommendation that:

> **all FFW projects, whether urban or rural, should be viewed as opportunities to use Title II commodities for improving food security and nutrition, even while continuing to emphasize employment and infrastructure goals.**

A. Targeting of Projects and Participants

1. FFW projects should be directed to participation by low-income women, and to small community-based infrastructure construction in the most deprived areas, with priority to families with highest food insecurity and taking account of the special nutritional needs of pregnant and nursing women.

B. Setting the Ration and Enhancing Nutrition

2. The calculation of rations, and the work required to perform them, should enable both male and female workers to earn at least 80% of the minimum wage, taking into account the following:

   a) additional calorie expenditure required for heavy work
   b) reductions in income from previous employment

c) required fees to cooperating sponsors
d) costs for tools, worker transportation, commodity transport, fuel, and other expenses

3. Bolivia UFFW projects should emphasize payment in locally-produced, widely-accepted commodities, with low cost per unit of calories or nutrients, and, if unfamiliar commodities must be included, distribution should be accompanied by information and demonstrations about proper preparation and use.

4. Through coordination with other programs, FFW projects should make such resources as:

a) nutrition education materials
b) nutritional supplements (e.g., Vitamin A capsules, iron tablets)
c) collective preparation and serving of nutritious snacks and midday meals

routinely available to participants, even in the absence of more formal nutrition-related program activities.

C. Enhancing Worker Compensation and Productivity

5. USAID/Bolivia, the cooperating sponsors and the municipalities should reconsider the current relationship, in each UFFW project, between the value of the ration and the tasks required to earn it, giving full consideration to equity goals and to the costs and benefits associated with alternative levels of compensation.

6. USAID/Bolivia, the cooperating sponsors and the municipalities should review alternatives for increasing productivity of UFFW participants (e.g., provision of tools and work clothes) and, when productivity has been improved, should share the benefits with the workers instead of increasing output goals.

7. ADRA and the Municipality of El Alto should explore alternatives for improving productivity and worker welfare by:

a) continued investment in tools and equipment
b) provision of child care at work sites
c) provision of nutritional supplementation and meals at work sites
d) introduction of special group incentive payments for task accomplishment
e) building training and career ladders for women into the UFFW Program.

D. Administration and Financing

8. USAID/Bolivia and the Municipality of Santa Cruz should collaborate to a) reallocate commodities now being used as partial wages in large-scale UFFW projects, to the small UFFW or other projects and b) to transfer funds to the large-project component from the activities receiving the reallocated commodities.

9. The setting of tasks required for earning rations should:

   a) remain flexible throughout the *Convenio* (Agreement) period
   b) be reviewed regularly to assure equal payment for equal work within and between projects
   c) be revised to assure the most nutritionally vulnerable FFW participants (such as those with the largest families and the least outside income) have priority in earning more than one ration
   d) include a grievance procedure allowing workers to appeal cooperating sponsor decisions about work tasks and their relation to earnings.

10. USAID/Bolivia should encourage El Alto's Municipality to make more effective use of their social workers and promotoras. Instead of monitoring eligibility and other administrative matters, they can become effective implementors of social programs and otherwise assist project work groups with:

   a) collective purchase of commodities
   b) participation in training for more skilled jobs
   c) assistance in job placement following UFFW participation
   d) identification and collaboration with existing NGO women's activities.

E. Sustainability

11. Cooperating sponsors and the municipalities should:

   a) reduce the time burdens on participants (e.g., by having participants work as close as possible to their homes, by minimizing travel to downtown offices for payment certification)
   b) scrutinize current costs and fees in order to minimize economic burdens of program participation (e.g., by purchasing tools with revolving credit funds, charging accident insurance to the communities, and making dental insurance optional).

I. INTRODUCTION

This Report presents the findings of a Study of the food security and nutrition consequences, income impact and commodity ration adequacy of the USAID/Bolivia Urban Food for Work Program (UFFW). The Agriculture and Rural Development Office of USAID/Bolivia (ARD) requested an assessment of these outcomes in its three largest UFFW projects, because UFFW projects in Bolivia, as elsewhere in the world, have been concerned with temporary employment generation and infrastructure construction goals rather than with food security or nutrition. USAID/Bolivia has taken the lead world-wide, with its efforts to improve the food security and nutrition impacts of its UFFW Program.

In 1986, responding to the economic emergency and related structural adjustment then prevailing in Bolivia, the USAID initiated an innovative Urban Food for Work Program (UFFW), designed to provide a "safety net" to protect the poor against the consequences of structural adjustment. An impressive array of infrastructure projects has been completed under the Program and the safety net has protected the many participants against deterioration of their food security and nutrition status. Indeed, during the first half of FY 92, CARITAS and ADRA (the Adventist Development and Relief Agency) completed 478 infrastructure projects as part of UFFW, representing 76% of those planned for FY 92. UFFW alone provides temporary employment for 27,357 people per month in Bolivia (Project Status Report, October 1991 - March 1992, USAID/Bolivia). In addition, the Mission's innovative inclusion of locally-produced iodized salt in the ration, has helped to alleviate the goiter problem endemic to Bolivia.

This Study is <u>not</u> an evaluation or critique of the UFFW Program. It is, rather, a constructive effort to assess, and improve, the food security and nutrition consequences of the Program. Since UFFW was <u>not</u> addressed to food security goals, it is not surprising that the Study finds much room to improve food security consequences. Similar findings could be made in any UFFW program in the world. Food for Work has, since inception, been concerned with employment and infrastructure, sometimes at the expense of food security. Accordingly, nothing in this Report should be viewed as singling out USAID/Bolivia's UFFW for criticism. The Bolivia Program merits high marks and, with more attention to food security and nutrition, will deserve even higher.

Amendments to PL480 (the 1990 Agricultural Trade and Assistance Act) require all Food Aid to address food security and nutrition goals. Responding to this mandate, USAID/Bolivia is currently reviewing and modifying all monetization and Title II activities, to improve their food security and nutrition consequences. Since the Mission's 1991 PL480 Development Assistance Strategy incorporates a shift to urban infrastructure projects from traditional school, maternal and child health (MCH) center and mothers' club distribution, it is of paramount

importance to assess current nutrition and food security effects of Food for Work (FFW), and to seek ways to enhance impact without jeopardizing other goals.

USAID/Bolivia contracted the Women and Infant Nutrition Support Project (WINS) of Education Development Center (EDC), Inc., to carry out the assessment through a buy-in to R&D/N's Contract No. DAN-5117-00-Q-0016-00. The Study was completed by a team that included Dr. Nina P. Schlossman, Deputy and Technical Director of WINS; Food Aid Consultant, Mr. James M. Pines; and Nutrition and Income Generation Consultant, Ms. Janet W. Lowenthal. Bolivian Nutritionist, Lic. Rosario Alurralde assisted the team.

The team worked in Bolivia from June 26 through July 16, 1992. At Mission request, assessment was limited to projects in El Alto, Cochabamba, and Santa Cruz, the largest urban areas of Bolivia. All team members visited the El Alto sites, and Mr. Pines and Dr. Schlossman visited the Santa Cruz site while Ms. Lowenthal and Lic. Alurralde visited Cochabamba. Team members reviewed FFW documentation and interviewed widely among USAID/Bolivia, Title II cooperating sponsors, municipalities involved in UFFW, and participating workers and their families. A list of persons interviewed is in Appendix IV.

The team also benefitted from interviews conducted before and during the visit, by a group of Bolivian nutritionists (see names in Acknowledgements). Preliminary information from interview responses were useful for design and execution of the present food security assessment. Unfortunately, findings from the USAID/Bolivia-commissioned background study of food ration consumption and use, begun in May 1992 under the supervision of Lic. Rosario Alurralde, were not yet available to be included in the writing of this Report.

II. CONTEXT

This Study took place in Bolivia, which is a food deficit country with an overall malnutrition rate of 35.5% and a daily per capita calorie shortfall of over 300 kcals. The Study context includes dramatic revision of USAID/Bolivia's PL480 Title II development strategy. The USAID/Bolivia Title II Program has grown modestly from 52,559 MT in 1987 to 55,655 MT programmed for FY 92. The new Title II strategy flows from a) revision of the Mission's development strategy to focus on "alternative development," defined as "progressive transformation of Bolivia from reliance on coca to a diversified sustainable and growing economy that is not coca-dependent," and b) lessons learned during the Mission's more than thirty years of implementing Title II Projects.

The Mission now seeks to integrate its Title II program with its overall strategic objectives. Consequently, Title II programming has shifted from distributions through schools, health centers, and mothers' clubs, to FFW activities that create temporary employment and urban infrastructure. The municipal infrastructure program is expected to support alternative development by generating productive physical assets and transferring job skills, and democratic initiatives by strengthening community organizations and providing temporary employment in smaller municipalities. Additionally, the construction of basic sanitation and other infrastructure contributes to the Mission's health and nutrition goals.

The design of FFW projects in the USAID/Bolivia context is also influenced by the Mission's increased emphasis on privatization and the Democratic Initiative. For example, the increased use of private contractors in UFFW stems in part from emphasis on privatization, and the municipal infrastructure activities receive priority partly because they contribute to effective democratic government.

Moreover, monetization of Title II commodities allows the USAID Bolivia Mission and cooperating sponsors to use Food Aid far more creatively and flexibly than in the past. Title II monetization has almost doubled from 9,075 MT in 1989 to 17,498 MT programmed for FY 92, with much of the increase going to support of UFFW activities. The increased emphasis on UFFW, coupled with the reduction in nutritionally-oriented direct distribution, makes it especially important to examine the food security and nutrition implications of FFW. At the very least, Missions and cooperating sponsors, in Bolivia and all over the world, need to ensure that use of Title II commodities does not damage food security or nutrition of vulnerable groups.

Changes in the overall Title II legislation further reinforce this conclusion. A recent United States Agency for International Development (A.I.D.) policy determination (PD-19, April 13, 1992) defines food security as:

> "When all people at all times have both physical and economic access to sufficient food to meet their dietary needs for a productive and healthy life."

The A.I.D. policy determination further identifies food availability, food access and food utilization/consumption as the three variables or elements that are central to the attainment of food security. Of these, the consumption and utilization of calories and nutrients encompasses the traditional province of nutrition.

In UFFW projects, improving food security through better nutrition involves, for example, a) review of composition and quantity of the ration, b) review of caloric expenditure required to earn a given ration, c) examination of family knowledge, attitudes and practices in relation to household and individual food behavior, d) identification of impact of projects on breastfeeding, child care and health, and e) studying possible improvements in health and sanitation services. No UFFW project currently addresses all of these variables. Sound project design, however, requires assessment of their likely influence in the project, on nutrition and, through it, on household and individual food security.

The A.I.D. policy determination represents the Agency's response to the new Congressional statutory mandate, contained in the 1990 PL480 Amendments. The 1990 Act requires that all food aid be used to help achieve food security in ways that are consonant with A.I.D.'s development objectives. By requesting this Study from WINS, the Bolivia Mission has assumed a leading role in helping the Agency meet the food security and nutrition concerns of Congress.

The study context also includes an economic environment in Bolivia in which high unemployment is endemic. Although estimates differ, there is little doubt that at least 40% of poor Bolivians are unemployed or underemployed. The pressure to provide temporary employment, however, competes with the Mission's concern that the UFFW projects produce significant increases in infrastructure. Providing temporary jobs often encourages simple work projects that are easily designed or implemented, instead of larger, technically sophisticated efforts that would be required to meet the Mission's infrastructure goal, and the municipalities' ever increasing need for basic services and infrastructure.

Gender considerations constitute a significant aspect of the Study context. Indeed, 80 % of participants in USAID/Bolivia's largest UFFW project, in El Alto, are women. A thorough review of the food security and nutritional consequences of FFW in Bolivia therefore requires consideration of the impressive array of women's organizations and training programs for women that exist currently in Bolivia, in part through USAID/Bolivia's efforts. This aspect of the Study context forced the study team's attention to the relationship between UFFW in El Alto and other projects addressed to women.

El Alto has been a priority area for other programs, such as Pro Salud or Pro Mujer, designed to improve the health and welfare of low-income women. Pro Salud is a self-financing Bolivian NGO providing affordable reproductive health care for women in El Alto. Pro Mujer, a La Paz NGO using USAID/Bolivia Monetization funds, for example, presently is graduating more than 800 women per month from courses devoted to empowerment, income generation, parenting skills, maternal and child health, family planning, basic business skills and the establishment of communal banks. The strong organizational structure of women's groups in El Alto also could be useful vehicles for complementary activities. Although Title II distribution of food to women's clubs has been discontinued, more than 1,000 clubs still exist today.

Finally, as a result of USAID/Bolivia work with the municipalities, the Bolivia context also includes relatively well-organized and well-developed municipal organizational structures. Without the absorptive capacity of these institutions, the Mission's commitment to increased UFFW activities would not have been feasible. The community organization structure in the cities targeted for UFFW also affects project design, sustainability and impact. Any study concerned with improving long term food security in the poverty communities participating in UFFW must give serious attention to the role of community organizations.

III. METHOD

The team developed a unique conceptual framework for reviewing the food security and nutrition effects associated with the temporary employment and infrastructure construction goals of the UFFW projects. Since the Bolivian UFFW Projects, as elsewhere in the world, did not include explicit food security or nutrition goals, assessment of these consequences required a method different from conventional impact evaluations.

The conceptual framework has the following components:

1. Calculation of the NET additional food (or income equivalent) provided through UFFW, after subtracting:

   a) increased energy costs associated with the work
   b) costs of tools, clothing, sponsor fees, worker transportation, and commodity storage and transport
   c) losses arising from sales of commodities at discount prices
   d) costs associated with increased use of health services and/or reduced breastfeeding

   e) wages or other income lost from accepting FFW employment.

2. Assessment of changes, associated with net income gains, in food habits, expenditure patterns, breastfeeding and other child care, earning capacity arising from skill development, and community involvement.

3. Identification of long term consequences associated with sustainability of completed projects, improved skills, increased income, and new community or individual behaviors resulting from UFFW programs.

In accordance with the scope of work, the method also includes review of all aspects of the UFFW activity, to identify program changes that would increase the contributions to food security and improved nutrition without jeopardizing primary program goals. Although baseline data related to nutrition and food security concerns for the projects reviewed were not available, making rigorous assessment impossible, the foregoing conceptual framework provides a useful guide for eliciting sufficient information to permit reliable conclusions. The Study method and approach emphasize identification of gross changes, such as less effective breastfeeding, identified by a significant number of participants. Indeed, the method and conceptual framework deliberately forced attention to possible or probable negative food security outcomes. More positively, the method also encourages inquiry regarding nutritionally favorable changes in food habits and other behaviors.

The Study method rejected any attempt to measure nutrition impact by anthropometric assessment of children of worker families. Initial review of UFFW projects made clear that the intermittent nature and short duration of participation, the modest net addition to family income and food availability, and the absence of nutrition education or other nutrition-related activities, would have made any changes in growth impossible to attribute to the program. Indeed, the economic context, which includes structural adjustment and ever increasing prices, makes it likely that stability of food security is the best that can be hoped for, in the absence of major independent efforts to address nutrition. For purposes of the Study method, the key indicators of nutritional and food security outcomes are:

a) the net addition to family income from FFW, and

b) the extent of increased food consumption (the net addition effect) resulting from this increase.

The team initially viewed food security and nutrition impact as additional outcomes that can be achieved without jeopardizing other goals, but this assumption fails to consider the trade-offs among competing goals. Therefore, the Study approach was modified to emphasize that, once food security and nutrition considerations have been identified, careful distinctions must be made between those impacts that are independent of other goals, and those that can be achieved only by some sacrifice of other goals. The method highlights the trade-offs between nutrition goals and other objectives. For example, selecting workers by nutritional criteria would reduce productivity below that of workers, who, though poor, are chosen primarily for their work potential. Similarly, choosing infrastructure projects for nutritional reasons may dismiss works capable of higher economic returns, e.g., non-food small businesses. Missions are free to choose priorities, but rational decision-making requires clear recognition of any sacrifices in food security or nutrition associated with the choices. At minimum, all FFW projects, however impressive their employment or infrastructure achievements, should not damage food security or nutrition. Any other outcome would distort the purposes of Title II.

The Study method also includes separate calculations, at community and national levels, of the aggregate contributions of the Bolivia UFFW Program to food security. The framework is based on an assumption that disincentive effects are negligible and that the entire commodity donation associated with FFW constitutes a net addition to food supply. Indeed, the Mission's disincentive study, completed as part of its Monetization proposal for FY 92-FY 94 has studied this aspect in detail for wheat (USAID/Bolivia, 1991). Since the commodities supplied (wheat flour, corn meal, corn-soy mixture, lentils and beans) are not locally produced to any great extent, this assumption seems reasonable.

The Report primarily addresses USAID/Bolivia's concerns, but the method and findings are of general applicability and should provide guidance to all USAIDs attempting to improve food security or nutrition impact of FFW. The conceptual framework will allow USAIDs and cooperating sponsors to explore the food security and nutrition implications of FFW designs.

IV. DESCRIPTION OF THE PROJECTS

The three projects examined differ with regard to size, target population, level and type of compensation, and project design. The largest, in EL ALTO, employs approximately 6,000 workers and is run by ADRA in conjunction with the Municipality. About 90% of the participants are very poor women, organized into groups of 30-50 for construction of sewers, roads, and curbs. They receive one ration for 16 days work and, because the ration is the primary source of family consumption, these FFW workers consume virtually all the commodities they receive. However, the significant caloric and economic costs associated with participation in the program reduce the net addition to family income and food access to a level that requires review.

A. THE MUNICIPALITY OF EL ALTO

El Alto, a sprawling settlement 1,000 feet above La Paz (already at 12,500 Feet), is now Bolivia's fourth-largest city. El Alto has been inundated so rapidly by campesinos, miners and other migrants in recent years, that both national and municipal authorities were astonished when the 1992 Census revealed that El Alto's population had quadrupled since 1974, to 392,774. In 1990, the prevalence of malnutrition among El Alto's under five year-old population was approximately 34 %, about equivalent to the national average, but significantly lower than that found in rural areas of the Department of La Paz (45 %). It should be noted that many of the participants in the El Alto UFFW project are recent arrivals from the rural areas, and as a group, most likely have a malnutrition prevalence rate closer to that of the rural areas.

El Alto's explosive growth (9 % per annum according to Census 1992) has created an urban planner's nightmare: totally inadequate infrastructure, social services far out-stripped by population growth, high unemployment and underemployment, growing delinquency, chronic malnutrition and endemic health problems. The mayor, an energetic and committed businessman, laments that the municipal budget of $3,500,000 cannot come close to meeting El Alto's needs.

Steady physical improvements are being made, however, and the Mayor attributes much of this progress to the UFFW program. Food for Work enables the municipality to significantly accelerate implementation of its infrastructure development plans, by leveraging the impact of its salaried municipal work force of 400, and of the heavy machinery it owns. Ideally, the Mayor would like to expand El Alto's UFFW program by up to five times its present size (using as much as 12,000 MT of commodities).

1. The UFFW Program in El Alto, FY 92

USAID/Bolivia has supported an UFFW program in El Alto since 1987, with ADRA (the Adventist Development and Relief Agency) as a Cooperating Sponsor. However, the UFFW program has expanded dramatically since the phase-out in 1991 of food distribution through the Mothers' Clubs. The program is administered by the Alcaldia's Division de Accion Comunal (the Municipality's division of Community Action, hereafter referred to as "Accion Comunal").

The FY 92 "*Convenio*" (Agreement) between the Municipality of El Alto and ADRA specifies three program goals: 1) mitigating the effects of unemployment, 2) accelerating the construction of public works throughout El Alto ("the zone"), and 3) promoting non-formal education. To accomplish these objectives, ADRA's Multi Year Operating Plan (MYOP) calls for the use of 2,499 metric tons (MT) of commodities, to compensate 6,087 workers, in the completion of 194 different projects (See Table 1).

TABLE I

Urban Infrastructure, El Alto, Bolivia
FY 91

Type of Project	No. of Projects	Volume of C/Project	Total Volume	Total Workers/M	Duration of Projects (months)	Ration KG/MO	Total Rations	Number of Benefs	Total Kilos
Cobblestoning of Street	70	6,000m2	420,000m2	2,499	6	50	12,495	12,495	749,700
Sidewalks	60	1,875ML	112,500ML	136	6	50	816	680	40,800
Forestation	10	2,000Ar	20,000Ar	454	3	50	1,362	2,270	68,100
Plants Nurseries	2	10,000pl	20,000pl	34	8	50	272	170	13,600
Transplant of Seedlings	2	10,000pl	20,000pl	34	8	50	272	170	13,600
Trash Collection	15	5,760m3	86,400m3	1,704	12	50	20,448	8,520	1,022,400
Collection of Aggregates	20	4,200m3	84,000m3	1,135	10	50	340	340	17,000
Sewerage Systems (Excavation & Fills)	6	1,500m3	9,000m3	68	5	50	340	340	17,000
Potable Water (Excavation & Fills)	9	389m3	3,501m3	23	6	50	138	114	6,900
TOTAL	194	-	-	6,087	-	-	49,992	30,438	2,499,600

Source: ADRA 1991 Annual Report, Bolivia Program

Roles of the Municipality and ADRA: Under the *Convenio*, the Municipality develops individual project proposals, giving priority to street paving, acquisition of construction materials, trash collection, forestation, potable water and sewerage. Accion Comunal submits plans for ADRA's approval, and provides supervision, technical direction and raw materials for each project.

Projects are implemented through work groups of up to 50 people, organized by Accion Comunal's network of 16 Promotoras (promoters). As the works advance, Accion Comunal presents ADRA with monthly progress reports for each work site, as the basis for ADRA's monthly food distribution.

ADRA, for its part, approves or rejects each project proposal, sets compensation (work requirements to earn the ration) rates, and retains the right to revise participation requirements under the program. The compensation rates are rarely changed during the annual convenio period, however. ADRA also provides supervision, controls the projects, and processes requests for monthly distribution of the rations.

Finally, because the Municipality is financially unable to provide tools for its FFW participants, ADRA included in its 1992 Adjusted MYOP, the sum of $19,984 from monetization funds, for this purpose. After an initial delay of nine months, ADRA is about to purchase and distribute these tools (picks, rakes, shovels, sieves and wheelbarrows).

Ration Size, Composition, Value and Acceptability: The current ration comes to a total of 56 kilos, with a CIF value of US$ 14.60, and a retail value in El Alto of 85.21 Bs (or US$ 22.00).[1] At the time of this study, it provided 22.5 kg wheat flour, 16 kg soy fortified corn meal, 13 kg of local rice, 3 kg of local sugar, and 1.2 kg of local iodized salt (see Table 2).

Until July 1991, when the Bolivian Government prohibited further importation of vegetable oil, the 50 kg ration included 2.5 kilos of vegetable oil. After this date, monetization funds were used to purchase local commodities as a substitute for the oil. The ration was adjusted to keep approximately constant its retail value, which meant a larger total ration, but one which no longer includes a calorically-dense commodity.

Changes in ration composition, initiated by AID/W, are generally based on availability and US prices of the individual commodities at time of purchase (call forward). Indeed, the initial 50 kg ration has already been modified twice in FY 92. The first modification was made because US lentil prices became prohibitive, and local commodities were substituted.

[1]Unless otherwise noted, the exchange rate used in this and all subsequent calculations is the rate of exchange in effect during the field visit for this study (July 1992), 3.86 Bs per US$ 1.00.

Because of the changes in commodity availability, the cooperating sponsors were then directed to increase the total weight of the ration to approximately 61 kg. The idea was to keep

TABLE 2

Ration Composition, Price, and Caloric Value in El Alto, Bolivia

The Ration	Quantity Kg/Month	Retail Value Bs/Month	Caloric Value Kcals/Month	
Wheat Flour	22.5	39.60	82,125	
Corn Meal	16.0	22.80	58,080	
Rice	13.0	16.90	47,320	
Sugar	3.0	5.43	11,610	
Iodized Salt	1.2	0.48	------	
TOTAL/MONTH	55.7	85.21		199,135

the monetary and caloric values steady. A recent letter from USAID/Bolivia (June 1992) has requested that the cooperating sponsors reduce the ration size to about 55 kg. ADRA has already made the change in El Alto and Santa Cruz, but the ration size in the Caritas Cochabamba project (see below) is still at the 64.2 kg level. Table 3 shows the initial and adjusted rations for FY 92. The rations may vary from location to location and time to time, in relation to the composition and availability of local stocks of UFFW commodities. It should be noted, that the ration itself is only an amount of commodities, a bookkeeping unit used by the agencies involved to keep track of stocks and project output. To the participants, the ration has value only in relation to the amount of work required to earn its resale value.

Site visits and survey data demonstrate widespread appreciation and use of the wheat flour and corn meal in El Alto, but the beans and lentils get very mixed reviews. With the exception of those few women who have learned (usually as domestic servants in higher-income homes) how to prepare these foods, recipients complain that these items require very long cooking times and produce diarrhea at El Alto's altitude. Utilization of the nutrients in these legumes is also reduced, making them inefficient sources of nutrition. Although the local rice, sugar and salt are certainly valued and used, there is universal dismay at the elimination of the

oil. The Study team, besieged at every site by requests to bring back this vital commodity, explained that policies of the Bolivian Government had been responsible for the termination.

TABLE 3

FY 92 Food Rations
USAID/Bolivia Food for Work Program

	CRS		ADRA	
	Original	Amendment	Original	Amendment
SFCM	2.08	3.774	1.875	3.76
APWF	3.75	4.5	4.5	4.5
LENTILS	2.08	0.625	1.875	0.43
SFB	----	----	----	----
VOIL	0.42	----	0.375	----
CSM	----	2.27	----	2.27
CM	0.42	----	0.625	----
RICE	0.42	0.28	0.625	0.675
BEANS	0.42	0.28	----	----
SUGAR	----	0.30	----	0.30
I SALT	0.24	0.24	0.24	0.24
VOIL	0.05	----	0.125	----
Per capita/mo.	9.91	12.269	10.24	12.175
Per family/mo.*	49.55	61.345	51.20	60.875

Source: USAID/Bolivia, A. Peñalosa

* Based on Average Bolivian Family Size of 5 Members.

APWF: Wheat Flour SFB: Soy Flour Blend
CSM: Corn Soy Mix SFCM: Soy Fortified Corn Meal
I SALT: Iodized Salt VOIL: Vegetable Oil

Project redesign must give careful attention to nutritional implications of the ration package. It is clear, after review of wholesale and retail food prices in El Alto, that the calorie and nutrient composition of an 85 Bs (US$ 22.00) retail package would be increased, if donated commodities were monetized and the proceeds paid to workers or used to buy more nutritionally

efficient local commodities for wage payments. Review of the survey data on family consumption patterns suggests that yucca, potato and oil might be nutritionally more effective components of the FFW ration.

Work Requirements for the Monthly Ration: ADRA now links UFFW compensation to the completion of specific tasks, rather than number of days or hours worked. Task specifications set by ADRA theoretically permit workers to earn one month's ration by working four days per week (raised from three days per week in 1991). In practice, according to workers, promotoras and Accion Comunal engineers, ADRA's task definitions often underestimate the time needed to complete specific tasks. As a result, many groups work 20 days or more, rather than the anticipated 16 days, to earn their monthly rations. Accion Comunal officials have requested ADRA to reformulate selected work requirements, but were told that no changes could be made during the *Convenio*'s fiscal year.

The El Alto UFFW Project provides a "maternity benefit" enabling pregnant women to stop work 15 days before delivery, and for 15 days after giving birth, while still receiving a ration covering this month. In practice, due to fear of not receiving food, many fail to advise in time, and work practically up to the day of delivery.

Targeting of Participants: In selecting workers for the program, the Municipality's promotoras are directed to give preference to the poorest, those with the most children, and widows. However, such instructions are hardly needed, for this program is virtually self-targeting. The work is so onerous and offers such low compensation, that only those with lesser or no alternatives choose to participate. Not surprisingly, then, the vast majority of workers are unskilled; 90% are women, of whom about 18 % are single heads of household, according to the survey data. Nonetheless, there is a greater demand for work than there are resources available. The *Convenio* also requires that each work group include at least three skilled workers, almost exclusively men, who are allowed a double ration of food.

Design and Selection of Projects: Many projects have direct implications for food security, such as water systems, sanitation, and paved roads. However, responding to other felt needs, the Project also includes works with less direct implications for food security, such as building parks and plazas. Projects include work in communities where the UFFW workers reside, but others require substantial travel to the work site. Even when working in their own communities, the workers enjoy far less benefit than is provided in most rural FFW (RFFW) programs. ADRA's Annual Report (1991) emphasizes the very significant contributions to income and food security that flow from irrigation, farm-to-market roads, conservation, and other RFFW projects. In the RFFW projects, these direct benefits are the primary outcomes for the worker, while the food incentive is welcome but minor.

The converse is true in El Alto's UFFW Project, where the food ration is critical and direct benefits appear far less significant to participants. El Alto includes many community projects, where people work in their own neighborhoods for visible direct benefits. However, in many

others, the benefit, though clearly substantial for the entire Municipality, seems of little direct importance to the workers.

Working Conditions: *Sacrificada* (involving sacrifice) is the term most frequently used by workers and Accion Comunal officials to describe the labor in El Alto. Without doubt it is backbreaking work, made more difficult still by a variety of factors within and outside the Program's control. These factors are discussed in some detail because they influence the nutritional consequences of the project.

To begin with the most obvious, the environmental conditions are hostile, including biting cold and difficult terrain; for example, stones have to be wrested from heavily compacted soil or taken from icy river beds.

The lack of tools makes many tasks (e.g. excavating and transporting stones) particularly onerous and time-consuming, because they are being done by hand, without gloves, or with inadequate implements. This aspect of the work should improve dramatically, with the imminent purchase and distribution by ADRA of wheelbarrows, shovels, picks and other items.

A related factor is the limited access to heavy machinery that could be used for such purposes as levelling ground. It is alleged that use of such machinery is allocated on the basis of political considerations, but these reports could not be confirmed. Whatever the reason, the absence of such equipment forces women to devote far more time, in much harder work, than should be required to accomplish specific tasks.

These factors loom especially large in relation to the nature of the target population. The work force includes many pregnant, nursing and elderly women. Even able-bodied female workers find the nature and duration of the work a physical strain. Moreover, the program limit of one ration, coupled with workers' limited opportunities to earn cash, means that many workers cannot afford to bring food to eat during the day, and consume nothing but coca leaves on the job. Coca has no nutritional value, but does suppress appetite.

ADRA officials acknowledge that these work conditions are less than ideal, but say this is necessary to preserve FFW as a resource for women. The implicit assumption is that the work conditions and compensation are so inadequate that men would not consider working in this program. If compensation improved, they say, male applicants would drive female workers out, leaving them far worse off than they are at present. However relevant this principle may be, there is much that can be done to improve working conditions while still maintaining FFW in El Alto as primarily a women's program.

2. Strengthening the Nutrition and Food Security Impacts of UFFW in El Alto

Calculating the net caloric and monetary addition to family food budget and income, resulting from UFFW participation, requires subtraction of associated calorie and economic costs, as described in the conceptual framework for this Study. A detailed estimate of the net addition in the El Alto Project appears as Appendix I to this Report.

The calculation shows that participants enjoy far less of an increase in economic and nutritional welfare than might have been expected, though they do benefit from a safety net and stability of employment, as contemplated by the UFFW Program. The net addition to real income of 23 Bs per month (about 16 % of the minimum wage) understates significance of the safety net, but is critical to understanding food security implications of the El Alto Project.

The El Alto model, in which a female works an average of 16 days for the above ration, presents some questions about the nutritional consequences of UFFW. For a 32 hour week plus travel time, the women are receiving approximately 46% of the calorie and nutrient requirements for a family of seven, the average size in the area. This compares unfavorably with the minimum wage, often paid for less strenuous labor, of 6.75 Bs per day. For those with no working male in the house, it is virtually impossible to feed a family adequately, since FFW leaves little extra time to supplement income.

At the same time, it is important to emphasize here that by paying participants in food, the El Alto project is already enhancing food security in ways that could not be achieved through cash. It is no criticism to say that the project should now be redesigned, with increased attention to improving its food security consequences still further. This exercise should begin with review of the modest net addition to food security that the project currently provides, followed by incorporation of features to increase its net addition to family food security and nutrition.

B. MUNICIPALITY OF COCHABAMBA

Bolivia's third largest city (560,000 pop.) presents a different picture from El alto in several respects, ranging from the climate and terrain, to the signs that it is an old, established city rather than one that has grown virtually overnight. Indeed, its 4.6 % rate of growth according to the 1992 census is half of El Alto's. Despite its relative affluence compared to El Alto, however, it also has its share of serious problems, including rising drug addiction, delinquency and unemployment. In 1989, the Department of Cochabamba had a 35.7 % prevalence of malnutrition among its urban population under five years of age, compared to the prevalence of 48.4 % in rural areas (Boletín del Sistema de Vigilancia Epidemiológica

Nutricional, SVEN, Vol. 4, No. 3, Sept. 1989). Lately, there has also been political uncertainty in the city, due to the former Mayor's refusal to cede his post to his recently elected successor.

1. The FFW Program in Cochabamba

FFW was initiated in Cochabamba in 1986, with Caritas as the cooperating sponsor, to serve as a "cushion" or safety net for structural adjustment and, in particular, to create employment for displaced miners who were migrating there in significant number. The program today is run in conjunction with the Municipalities of Cochabamba and seven provincial cities. According to the *Convenio* between the Municipality of Cochabamba and Caritas, the program's primary aim remains the amelioration of unemployment. It is only a fraction of the program in El Alto, employing between 250-300 workers on average in the City of Cochabamba and seven provincial cities. In FY 91, 46 projects (primarily street paving and collecting the stones used for this purpose) were completed with 362 MT of UFFW commodities.

To date, the main constraint to program expansion has been the inability to keep pace with the need for raw materials (compared to El Alto, where the major constraint is lack of additional food to meet program demand). The Municipality claims that the program will shortly expand, when it gets 21 more trucks and can hire 105 more people to gather stones.

Roles of the Municipalities and Caritas: As in El Alto, the municipal authorities provide administrative and technical oversight, plus raw materials. In many cases, however, they also use municipal trucks to transport workers (especially the stone gatherers, or *acopiadoras*), to distant job sites, and then use the same trucks to bring the stones to the paving sites. Unlike in El Alto, however, some of the provincial municipalities pay the Caritas fee of 11 Bs per ration, on behalf of the workers.

Caritas provides managerial and technical assistance but, departing from traditional Title II models, administers the program through approximately 35 private contractors (though Caritas itself vigorously eschews this term, preferring the title "responsables" instead). On the basis of signed *Convenios* with Caritas, the contractors -- all ex-miners and FFW laborers themselves -- select fellow workers, identify projects for their own groups, and sell some portion of the commodities for cash which is distributed among the workers. In return, the contractors receive 10% of each worker's food, which they sell for cash. Some contractors also own various tools that they rent to their own workers. Most of the 35 or so groups have no more than 6-7 members, though a handful have as many as 18.

Ration Size, Composition, Value and Acceptability: The 64.70 Kilo ration consists of the items in Table 4. Although the ration commodities have a retail value of 122 Bs (US$ 31.6), based on prices from local markets in Cochabamba collected at the time of the Study,

Caritas places a retail value of 68 Bs on the ration, knowing that workers and contractors receive far less when they sell the food in the market.

In Cochabamba too, there was general dismay at the elimination of oil from the ration, coupled with strong rejection of the corn meal, because of its taste but even more because of the very low price it brings on the open market.

TABLE 4

Ration Composition, Price, and Caloric Value in Cochabamba, Bolivia

Ration Component	Quantity (Kg)	Retail Price (Bs/Month)	Caloric Value (Kcals/Month)
Wheat Flour	22.5	34.00	82,125
Corn Meal	21.0	48.00	76,230
Rice (or CSM or beans)	17.0	34.00	61,880
Sugar	3.0	5.70	11,610
Iodized Salt	1.2	0.48	------
TOTAL	64.7	122.18	231,845

Work Requirements: Caritas allocates rations on the basis of task descriptions taken from an engineering textbook on "Mano de Obra. Caritas' Director of Public Works noted that since the program's inception in 1986, the work requirements have been progressively reduced with the concurrence of the municipalities, in response to worker complaints. For example, the number of square meters to be paved, per ration, has gone from 60 to 40 to 35. During this period, the ration has also increased in size, though not necessarily in market value. The reduction of work per ration does not prevent Cochabamba participants from complaining about the job requirements. However, they are certainly better off than workers in El Alto, who now have to work more time in order to earn less food.

It was impossible to get precise or consistent estimates of the time required for one worker to earn one ration. The general picture that emerged from interviews with Caritas, contractors and workers was that most families can earn about 2 1/2 rations a month, or 161.75 kg per month, after working 5-6 days a week in family groups of 4 or 5. This would cover approximately 130 % of the total requirements for a household of seven members. It is not surprising that most participants are selling part of their food earnings.

Cochabamba participants also benefit from the opportunity to earn multiple rations. In a meeting with the team, each of 35 contractors was asked how many rations his group usually earned. Each indicated that many workers often receive two and a half rations in a month. Furthermore, some have participated for at least four years. They apparently suffer few delays between projects. On the contrary, the high mobility in and out of the program is due not to program-related factors, but to worker success in locating better employment in the private sector. When the economy contracts or outside projects end, the workers return to UFFW.

Targeting of Participants: The Cochabamba program targets unemployed heads of families, primarily from among the displaced miners. The male contractors select their own workers with this criterion in mind; they also look for men with some experience, though include others who are willing to be trained. These workers are not the very neediest. For instance, the ex-miners receive pensions of 80 Bs a month. However, this program has made a different trade-off from El Alto's, opting for a somewhat more skilled work force in order to produce higher quality public works.

The majority of these workers are street pavers. In the Caritas program this occupation is considered too difficult for women and is therefore reserved exclusively for men. (No explanation was given as to why ADRA's nearby rural FFW program uses women as pavers). About 6 of the 35 or so contractors are women, who hire other women (about 70%) and some men (30%) as *acopiadoras* (stone-gatherers). Some female workers are single heads of families, but few have very young children.

Working Conditions: These observations are necessarily impressionistic, because the team was able to visit only one group that was actually working (though members of another group were interviewed at the municipality). However, these first-hand impressions were supplemented through discussions with Caritas and municipal officials, and the team nutritionist.

Without a doubt, the work is physically taxing and monotonous. Nevertheless, a number of factors combine to make Cochabamba working conditions a far cry from those in El Alto. First, the weather is warm and the terrain is more favorable. Thanks to transportation provided by some participating municipalities, most workers are spared long travel time to and from work, and do not have to transport raw materials or tools by hand.

Moreover, due to the composition of Cochabamba's FFW labor force, workers here are much better matched with the tasks to be done. There are few elderly, pregnant or nursing women, nor many babies or young children, at the work sites. In addition, because the ex-miners are better off financially (through their pensions and their higher FFW earnings), they can afford to purchase mid-day meals at local *pensiones* (restaurants).

2. Project Impact

The Cochabamba project is clearly constructing useful infrastructure throughout the surrounding region, and also provides a safety net for workers who cannot be assured of permanent employment in the private sector. In fact, this safety net is far greater than that provided to the target population in El Alto (although the population it serves in Cochabamba is less needy). The program also appears to have developed a good model for balancing the FFW job requirements, in conjunction with workers demands and municipalities' needs. In this crucial area, Caritas has shown a commendable flexibility in its program oversight.

In sum, however, the Cochabamba UFFW program confirms the team's view that in cases where workers are not the most needy, and receive no direct benefits from their projects (other than temporary employment), they are indistinguishable from wage laborers. This being the case, the workers themselves would much prefer to be paid in money, or a combination of money and food. Such a system would avoid the current practice of market sales of the commodities, and would also better meet the workers' needs.

C. MUNICIPALITY OF SANTA CRUZ DE LA SIERRA

Santa Cruz de la Sierra is a vital city of more than 1,000,000 inhabitants, growing at the rate of 6.4% annually, according to the 1992 Census. Urban growth has occurred in as series of concentric rings around the old urban core, with poor, migratory populations drawn from all over the country concentrated in the outer-most rings. The city has a prevalence of low and moderate malnutrition ranging from 18 % to 26 % among the population of children under five years of age (Boletín del Sistema de Vigilancia Epidemiológica Nutricional, SVEN, Vol. 3, No. 3, Sept 1991).

Although Santa Cruz appears to be a thriving metropolis, poor residents have suffered, just as in other cities, from the economic stagnation afflicting the entire country. The Municipality has difficulty providing services at a rate equal to population growth, but, compared to El Alto, the degree of deprivation is far lower. In addition, the tropical climate of Santa Cruz eases many of the burdens of poverty. Despite recession and structural adjustment, Santa Cruz enjoys an unemployment rate below 10 %. As a result, the daily minimum wage for unskilled labor of 12 Bs (about US$ 3.00) is paid widely and UFFW participants, receiving part of wages in food, have little hesitation about leaving the program for other work when the food-assisted wage appears unsatisfactory.

1. Operation of the UFFW Project

The Santa Cruz UFFW Program was initiated in FY 91 as a pilot project. This innovative program includes partial payment of wages in Title II commodities, by private employers executing large infrastructure projects on behalf of the Alcaldia de Santa Cruz de la Sierra (the Municipality). The Fondo de Desarollo Municipal (FDM), the Municipality's planning and execution arm, prepares specifications for projects, chosen in accordance with the city's master plan, and awards contracts through competitive bidding. In addition, the program includes a "small community-based project" component, in which commodities are used flexibly and creatively to help community groups in neighborhoods within the city, to respond to their own felt needs. Both components represent innovative approaches for translating the rural community-based FFW model to the urban context. Table 5 presents FY 91 accomplishments.

Although the "large project" component has generated efficient infrastructure construction and improvements, the use of FFW has not proven to be an effective mechanism for paying workers or improving food security for workers and their families. Use of Title II commodities in the community-based component does provide the Municipality with resources useful for stimulating a larger volume of constructive community activity than would otherwise be possible.

Unfortunately, the virtual paralysis of FFW activity in Santa Cruz during the last seven months, because of unprecedented rains, provided little opportunity to assess impact on, or to interview, workers. Nevertheless, the Santa Cruz model is innovative and of sufficient interest, and interviews provided enough information, to make inclusion of it in this Report worthwhile.

The UFFW Program in Santa Cruz has been plagued by rapid turnover of cooperating sponsors. It began in 1989, implemented by the Municipality of the City of Santa Cruz de la Sierra with Caritas as cooperating sponsor. In little more than a year, ADRA succeeded Caritas, but will retire as cooperating sponsor in December, 1992, because, despite considerable effort on both sides, ADRA and the Municipality have been unable to resolve their differences. Project Concern, another United States NGO which already works effectively in Bolivia, may succeed ADRA, though no contract has yet been signed. The rapid succession of cooperating sponsors complicates Program administration, but does not appear to have interfered with regular delivery of commodities.

TABLE 5

Infrastructure Accomplishments for UFFW Projects in Santa Cruz de la Sierra, Bolivia, FY 91

Type of Project	Programmed		Executed		Total	
	Number of Projects	Total Volume	Number of Projects	Total Volume	No. of Workers	Benefic.
1. Forestation		100000 pl				
2. Cobblestoning		240000 m²	3	30000 m²	300	1500
3. Drain Canal Lining		60000 m	7	40281 m	421	2105
4. Trash Collection		7000 m³		9000 m³	55	275
5. Latrine Construction		2 units	1		8	40
6. Schools		4 units	5	2091 m²	240	1200
7. Sports Fields		2 units	4	2900 m²	144	720
8. Children's Parks			2	7763 m²	200	1000
9. Plazas			5	46599 m²	300	1500
10. Mesh Contour			3	1200 m	52	260
11. Canal Cleaning			2	9647 m	150	750
12. Sidewalks			1	560 m²	83	415
13. Foot Bridges				394 m	80	400
14. Market Buildings			5	2112 m²	236	1180
15. Potable Water Systems			1		100	500
Totals			39		2369	11845

Source: ADRA 1991 Annual Report, Bolivia Program.

In 1991, ADRA distributed 1,808 MT of Title II commodities as compensation for 2,369 unskilled laborers, and is currently in the process of distributing 3,000 MT programmed for FY 92. Two thousand MT are programmed for large infrastructure projects (street paving) and the remainder is programmed for small projects averaging $10,000, such as plazas, school bathrooms, sports facilities and drainage canals, initiated and supported by community groups. In addition to Title II commodities, $1,200,000 have been committed to the Municipality from monetization proceeds for FY 92, to cover non-wage expenses of infrastructure construction.

The Municipality executes the large projects through private contractors, chosen through competitive bid, and project specifications require that the contractor accept an amount of Title II commodities, equal to 100 % of the anticipated wage requirements for unskilled labor, as part of contract compensation. The total commodity value for the 2,000 MT included in the pavement project category represents approximately 5 % of the total construction budget for such projects. These large projects are financed by a number of ingenious arrangements, including acceptance of commodities by the contractors, with full payment eventually being recovered from the proceeds of taxes or user fees.

The use of food as capital, and the replenishment of initial outlay through taxation, creates a revolving fund for urban improvements that, coupled with efficiency of construction and monitoring, makes the Municipality, with the private contractors, an outstanding provider of urban services in Bolivia. Indeed, 95% of the city has water and electricity. Although the Municipality maintains a continuing program for perfecting property titles in low income areas, infrastructure construction necessarily favors better established neighborhoods with greater capacity to pay. Poorer areas do receive considerable attention, however, and the municipal master plan contemplates gradual extension of services throughout the city as tax payments replenish initial outlays.

Allegations of "politics" and corruption, in selection and execution of UFFW-assisted projects, were encountered during the visit. While investigation of such allegations was beyond the scope of the Study, interviews, examination of records, and observation indicated that the Municipality of Santa Cruz has compiled an impressive record of public services and construction throughout the city. Politics and corruption may occur, but they have little apparent effect on the rate and quality of urban improvements.

The street paving and drainage canals respond to critical needs for Santa Cruz development, since the city is prone to flooding in the rainy season, which makes roads in all zones impassable and inhibits many other aspects of development. Indeed, all UFFW projects were suspended along with other construction efforts, between November 1991 and July 1992, because of historically heavy rains. In the first six months of the year, 3,600 mm of rain accumulated, three times the average annual rainfall.

a. Large Projects

After award of a contract for execution of a large project, the successful company submits to ADRA an initial estimate of the first month's commodity needs. Each week, as work progresses, the contractor submits a payroll record, ADRA inspects the progress, and, if satisfied, authorizes the company to pay commodity wages to the workers. In many cases, payment is made through a subcontractor, who recruits and employs the workers. Recent changes made by USAID/Bolivia to ensure that workers receive the food portion of their

payment, require ADRA to deliver the commodities directly to the subcontractors or to workers at the work site, rather than having the contractors pick up the food at ADRA warehouses.

The amount of food received by each worker varies widely, depending on the company or subcontractors' assessment of the percentage of food wages that an individual worker will accept. Responsibility for dividing the commodities into packages appropriate for each worker (*fraccionando*) rests with the construction company. Most workers resent being paid in commodities, both because the ration is not fully consistent with local food habits, and because many are young or have come to Santa Cruz for work without their families, and need cash for non-food expenditures. Moreover, commodities deteriorate rapidly in tropical Santa Cruz, and require temperature-controlled storage not available to either companies or workers.

The companies, unable to pay 100% food wages, as stipulated in the contract specifications, often sell part of the commodities and use the proceeds to pay cash wages. The workers, needing cash or disliking the food, also sell substantial quantities, frequently to purchasers who appear at the work site and buy in bulk. Detection of sales is difficult, because all persons interviewed agreed that Title II commodities are re-packaged before appearance in the market.

A number of anecdotes further illustrate flaws in the present model. Because beans, formerly included in the ration, could not be sold, several employers prepared and distributed free hot meals to workers, to avoid having to store the commodities. Clearly this is not a bad use of the commodities, because it provides a nutritious meal to workers on the job. Unfortunately, the companies were counting on the sales value of the beans to pay their workers. In another case, the construction company employing the largest number of UFFW participants (200) reported having almost 5 MT of commodities in a warehouse for over six months, because they could neither be distributed nor sold at favorable prices. In addition, the Program was obliged to adjust food wages upward by as much as 40 %, on several occasions, because spoilage led to worker protests against the current wage level. Supplemental deliveries by ADRA restored the wage level and reimbursed the companies for losses beyond their control.

Of the approximately 15 companies currently under contract with the Municipality in this program, only two have on any occasion had more than 50 UFFW workers on the job. Unskilled labor is hired one week at a time, turnover is high, and those remaining rarely work for more than a few months.

Unlike ADRA (to date) in El Alto, the private construction companies provide their workers with tools, including wheel barrows, picks, shovels, and rubber boots. All the construction company officials agreed that, without tools, efficiency would be dramatically reduced. To further increase output, the companies usually hire a *capataz*, (overseer) to "push" the workers. In El Alto, group motivation substitutes for this anachronistic arrangement.

b. Community Projects

The community projects present a picture more consistent with the intent of FFW. Community groups present their plans, including the resources and labor they will contribute to the Municipality. After review, the Municipality may provide commodities as an incentive for community labor or to reduce the community's need for cash to execute the project. Work is at the convenience of the community, the projects respond to felt needs, and the pressure for efficiency is eased. The projects average approximately $10,000 each and use about $1,000 in commodities. The Municipality characterizes the small projects as "social," but recognizes that most are aspects of infrastructure that complement well the more elaborate municipal construction priorities. This flexible use of commodities serves useful purposes, appears to be well supervised. The Municipality asserts and the team agrees that this component presents a more appropriate vehicle for use of FFW resources.

2. Targeting

The program does not now target the most disadvantaged groups. Program participants are day laborers who, although not well off, do earn the minimum wage (unlike the participants in El Alto, who only earn 65 % of minimum wage)). They are generally young men or migrant workers not living with their families. Because the men do not earn a large quantity of food (a maximum of 45% of any wage is food), and because they generally work only a few weeks or months on the projects, the Title II food can contribute little to their family food security. According to the survey data there are many nutritionally vulnerable female-headed households in Santa Cruz, whose food security problems are of concern to the Municipality and to USAID/Bolivia. Targeting the food to this group would certainly increase the food security effects of the Title II commodities.

FFW can help to resolve these problems, but only through programs targeted toward women, but outside the field of construction. For cultural reasons, and because of the relative prosperity, women typically do not work in Santa Cruz, unless the family is in dire straits. As a result, unlike El Alto, there is a near taboo against women working in construction. Indeed, the Municipality, and the construction firms it employs, reject firmly any notion of including women as participants in the major infrastructure projects that dominate the UFFW program in Santa Cruz. The technical sophistication, concern for efficiency by both municipality and private contractors, and cultural patterns of the larger projects, make it difficult to employ women, and none work in the large projects. Municipal officials acknowledge that women can be effectively employed in the smaller, community-based projects, that constitute the second UFFW component.

3. Adequacy of the Ration

The 52.7 kg ration currently consists of 22.5 kg of wheat flour, 16 kg of corn meal, 13 kg of locally purchased rice, and 1.2 kg of Bolivian iodized salt. It has changed in composition four times during the current fiscal year, due to unavailability of one or another commodity or to cessation of vegetable oil in Title II deliveries. As shown in Table 6, the ration has a retail value of 58.21 Bs and provides approximately 43 % of the requirements for a household of seven members, according to local market prices at the time of the Study.

When the UFFW ration composition is unacceptable, inefficiency results. Despite the negotiations and responses to market forces that characterize UFFW payments in Santa Cruz, interviews revealed significant dissatisfaction with the ration for this and other reasons. In practice, the typical worker receives less than 50% of wages in commodities. Because he can work elsewhere for the minimum wage in cash, the ration provides negligible net increase to family income and food availability. Unlike El Alto, where food wages to women are the best way to assure consumption, problems of male control over income are apparently less severe in Santa Cruz. In any event, the men are reluctant to accept commodities and there is no possibility of substituting female labor in the program. If wages in Santa Cruz must be paid in food instead of cash, the ration (including commodity types and quantities) should be tailored as precisely as possible to the food preferences of the workers.

TABLE 6

Ration Composition, Price, and Caloric Value in Santa Cruz de la Sierra, Bolivia

The Ration	Quantity Kg/Month	Retail Value Bs/Month	Caloric Value Kcals/Month
Wheat Flour	22.5	39.60	82,125
Corn Meal	16.0	22.80	58,080
Rice	13.0	16.90	47,320
Iodized Salt	1.2	0.48	------
TOTAL	55.7	85.21	187,525

Although the UFFW commodities do not improve food security of individual families significantly, they do, in the aggregate, represent a net addition to the wage fund available to

the Municipality for temporary employment and infrastructure construction. Unfortunately, because the Municipality lacks cash resources and the laborers will not accept full food wages, much of the Title II contribution is simply monetized indirectly and used to meet the cash needs of the companies and workers.

4. Project Redesign

There can be little doubt that the Municipality has used the commodities to generate substantial employment and to support much needed infrastructure development. These outcomes, however, could have been achieved far more efficiently with full payment of money wages. The municipal officials, company officers, subcontractors and workers, all agreed that, while food wages are better than nothing, they are burdensome, inefficient, and far less satisfactory in every respect than money.

The Santa Cruz UFFW Project presents a classic example of the dilemma facing UFFW programs. It is clear that money rather than commodities would be more appropriate for payment of wages. It is equally clear that Santa Cruz has health, education, and income generation programs for women, in which nutritionally vulnerable women would accept commodity wages. Moreover, the Mayor and his staff are concerned about improving nutrition of vulnerable groups, and indicate desire to develop a food security strategy including a nutrition education program which could also improve consumer use of UFFW commodities.

This analysis suggests that USAID/Bolivia should review financial grants to NGO's and Government programs, together with UFFW financing of large projects for the Municipality, to identify ways of shifting money from other programs to the Municipality and, on the other hand, of transferring commodities from the Municipality large projects program to voluntary and governmental agencies that can use food resources more effectively.

In other words, if the commodities can be shifted to where they can be better used and have greater impact, with money going to the Municipality where it can be used more effectively, all programs will benefit. Furthermore, because of the costs associated with the UFFW Program, the Municipality would accept (e.g.) $8.00 in cash to replace $10.00 in commodities, which means that voluntary and governmental agencies could be offered 25 % more (10/8 = 125 %) value in commodities than they now get in cash.

Municipal officials responded favorably to the reallocation proposal and, with some encouragement, would systematically review the possibilities for shifting cash and commodities between the two UFFW components. In the small-projects component, for example, increased use of commodities would stimulate more projects in marginal areas, and the use of lower-income small businesses and laborers. The cash previously employed for such purposes could then be converted to wages in the larger urban projects.

Many drainage canals, now included in the large projects component, might become community-based small projects, employing more women and dispensing with private construction contractors. In addition, classrooms, health posts, and other aspects of infrastructure can be included in the small projects category. If, for example, the present balance of 2,000 MT in the large project component and 1,000 MT for small projects could be reversed, commodity sales would diminish greatly and food use would be more effective.

The foregoing proposed reallocations clearly will require considerable ingenuity and some complicated adjustments. Moreover, monetary and food resources may not be as fungible in the Municipality's budget as required to make a 100 % exchange of cash for food, as contemplated. However, to the extent that Title II commodities can be used more appropriately, and especially where they are uniquely suitable, as in many women's projects, the contribution to food security can be increased dramatically without any reduction of achievement in urban infrastructure, temporary employment, or any other goals. If monetization cannot be increased, and money is unavailable from other sources, reallocation and shifting of resources is the best way to preserve the impressive Santa Cruz infrastructure effort without continuing the unsatisfactory commodity-based model.

Notwithstanding the above, the team wishes to leave no doubt that, despite the disadvantages of commodity wages, continued use of Title II resources in large projects remains viable, if money cannot be made available, to maintain the level of infrastructure.
If the reallocations proposed in this Report cannot be implemented, payment of wages in food should be continued. The Municipality's impressive technical achievements would be even greater if they could use monetary resources instead of food, but, if UFFW is the only alternative, all concerned, including the team, agree that it should be continued. However, the experience to date suggests that substitution of cash, through monetization or other means, is preferable to the present arrangement.

5. Sustainability

Officials of the Municipality of Santa Cruz show considerable concern and capacity for maintaining infrastructure projects constructed with the aid of FFW commodities. Municipal crews routinely clean, repair, and restore infrastructure that was built by private firms. While a few projects use UFFW to compensate street cleaners, canal maintenance staff and similar workers, sustainability depends on municipal assumption of maintenance. Furthermore, temporary employment of poor people for menial cleaning and maintenance tasks has long been discredited in FFW programs. Such activities provide little direct benefit to workers, and discourage independent sustained maintenance of completed infrastructure.

The Municipality and the private employers are less concerned about the sustainability of workers' benefits. Projects provide temporary employment and, if the commodities stop, the

workers return to the labor market with few additional skills and no direct benefits. The Municipality administers an extensive variety of social programs, but none are directed specifically for UFFW workers. It is difficult to identify initiatives that might serve this young, amorphous, and mobile population. Compared to UFFW participants in other Bolivian projects, these unskilled minimum-wage laborers are better off and enjoy more food security. Title II commodities in FFW can be better targeted to improve the lot of more-food insecure groups.

Santa Cruz offers an outstanding example of municipal administration in Bolivia. The Municipality is building infrastructure, financing initial stages of construction effectively and will recover total costs of all completed works through taxes and user charges. This unfortunately means that unskilled laborers will receive no direct benefits other than wages, since they will ultimately be obliged to pay for improved infrastructure. Accordingly, UFFW is best reserved for community-based activities, in which modest incentive payments generate permanent benefits that compensate for sacrifices of the workers.

D. Impact of UFFW on National and Community Food Security

The addition of FFW to existing public works programs in Bolivian municipalities would improve local food security, at least temporarily, if migration did not exceed the volume of commodities received, by enough to reduce per capita food availability. In Santa Cruz, for example, where population grew by 6 % in 1991, receipt of 1,200 MT of Title II commodities kept per capita availability from being even lower. This is an important contribution to community food security, but is manifested primarily through tiny additions to many individual families, rather than in any visible change.

When UFFW, provides jobs, the participants no longer compete with others for the limited pool of employment and food. With fewer people now competing, those remaining are marginally better off, in income and food security terms, because the fixed pool is divided among fewer people. However, when the rate of migration exceeds the rate of increase in food availability, including Title II food, the "safety net" effect is reflected only in the obvious conclusion that things would be even worse without it.

Similar conclusions follow for the national level. The UFFW commodities, which totalled 8,045 MT in 1991, clearly made a positive difference in Bolivian food security. Two additional factors suggest that the Program is an especially effective vehicle for addressing food security. First, as the Study survey and interviews make clear, UFFW improves direct access to food, because virtually <u>all</u> of the commodities paid as wages in UFFW will be consumed by nutritionally vulnerable people with inadquate <u>access</u> to food. In El Alto, participants already consume most of the rations received. Second, urban programs improve food security indirectly, through the impact of water and sanitation infrastructure improvements on family health and nutrient utilization. Roads built with the assistance of Title II commodities contribute to general

economic development, ultimately the most critical factor in improving national food security.

Although some evidence of barter and sales was found in Cochabamba, removing yellow corn flour from the ration and reducing participant capacity to earn more than family requirements, will help to assure full consumption of commodities received. In Santa Cruz, if commodities are shifted from the "Large Project" to the "community project" component, participants will also consume most of the ration. The "substitution effect," where people reduce food expenditures when they receive donated commodities, will be drastically reduced, because the Title II commodities will go to workers who want and need the food.

Bolivian concern for disincentive effects, while useful in assuring additionality of the donated commodities, prevents increases in monetization that could improve impact of the FFW Program substantially. Participants interviewed were almost unanimous in requesting that FFW rations include vegetable oil and milk. Increased monetization of wheat flour, with proceeds to be used for purchase of locally produced oil, or inclusion of Title II vegetable oil in shipments, would respond to strongly felt needs of the Bolivian poor and strengthen the urban program. However, neither option is feasible under the present posture of the Bolivian Government. Conclusions of this Study, regarding the strong desires of poor people for vegetable oil, should be a useful argument in negotiating a more effective Urban Food For Work Program.

Despite the qualifications and reservations expressed regarding food security consequences of the UFFW Program, the team wishes to emphasize the very positive contributions, at community and national levels, made by the Program. UFFW established, and has achieved, goals of temporary employment to provide a safety net and infrastructure construction. By establishing outstanding institutional frameworks and operating systems in FFW, USAID/Bolivia has prepared the way for a longer-term, non-emergency approach that will make UFFW an outstanding contributor to the food security of Bolivia.

V. THE LEGACY OF RURAL FOOD FOR WORK PROGRAMS

The Study team has reviewed three very different FFW designs, which allow useful comparisons to be made. Different as these three projects are, however, they all share common origins in the traditional rural FFW model. Because of this legacy, an historical process in which the availability of Title II commodities, and concern for alleviating unemployment and the consequences of structural adjustment, led a well-established and proven FFW model to be applied for new purposes in a different context.

Despite the best intentions, this process has produced unanticipated outcomes that make the urban Program less effective than it could be. The following section examines the ways that the traditional rural FFW model continues to influence the design and implementation of urban FFW projects today.

FFW as Incentive for Community Development: Under the traditional model, FFW provided a modest, clearly supplementary, incentive to community development groups working for their own benefit. The groups used the food to encourage participation by their poorest members, who could not otherwise have afforded to volunteer in community projects. The work was relaxed and of short duration, and rations were a small percentage of family income and food budgets. The poor sacrificed, but so did everyone else, as all shared in the work. In rural FFW, adequate supplies of tools were available, and all participants benefitted directly, and substantially, from the completed projects.

From Supplementary Incentive to Full-Time Wage: In 1986, when the Municipality of La Paz, cooperating sponsors and the USAID first became serious about UFFW, the projects resembled the traditional model. However, early success, the desire for infrastructure, and the economic context soon led the Municipality to use FFW as "incentive" in larger projects, such as roads and sewers, often in areas distant from the workers' communities. Work time for the tasks required to earn a more substantial ration was increased, frequently to a level comparable to full-time employment. Workers had little time left to earn money income and, at least temporarily, became dependent on the work and the food for survival.

Duration of employment also expanded. In Cochabamba, for example, workers have been "on the program" for as long as four years. FFW rations have become a large and critical percentage of family incomes and food budgets, an outcome never intended in the Program. The need to sell or trade the food received increased, since people had no time to earn cash for non-food expenses.

Instead of being a supplement, the commodities often barely replaced the desperately low and insecure incomes previously gained by the workers. Rations continued to be viewed as an "incentive" by the cooperating sponsors, when they were now actually serving as wages for near-full time employment, and the desire for infrastructure pushed tasks to the point where worker compensation was well below the minimum wage. This is especially true in the El Alto project. More fortunate neighbors no longer volunteered, and the UFFW workers became critical for the impressive infrastructure effort being mounted. Desperate for employment, they accepted the situation as presented.

The community organizations became recruiters of work groups and the groups themselves became impressive examples of democracy, organizational cohesion and effectiveness. However, the economically and nutritionally vulnerable workers, often without tools and exposed to risk of injury, earned substantially less than comparable commercial workers. Though the low compensation allowed the municipalities to give temporary employment to more people, this was little comfort to those employed. Interviews suggest that many such workers, who are no longer volunteers, feel that they are being called upon to make sacrifices while others enjoy the benefits of their work.

In short, the compensation levels and short-term burdens of a community-oriented FFW incentive program translated poorly into a longer-term employment generation and infrastructure program. The current approach fails to distinguish between the traditional model and the new urban projects, though their food security consequences differ dramatically. Where the food serves as a modest but clearly supplementary incentive, families enjoy a brief increase in food security. But when the "incentive" level Title II ration becomes the mainstay of family diets and Program work leaves little time to earn other income, there is scant improvement in the food security of individual families, even though the program does benefit a large total number of families.

VI. IMPROVING INCOME, FOOD SECURITY, AND NUTRITION CONSEQUENCES OF URBAN FOOD FOR WORK

The three very different Bolivian urban FFW models reviewed in this Study provide useful material for assessing alternative consequences for income, nutrition and food security related to program variations in UFFW. Based on team findings, interviews and documentary review, the Study has described the impact of UFFW in Bolivia, and now presents a more generally applicable framework for designing and assessing the food security and nutrition implications of FFW projects in Bolivia and throughout the world.

A. Targeting

The nutrition and food security consequences of FFW can be enhanced by targeting 1) areas and communities; 2) participating workers (or families); and 3) public works, by type and location. More specifically, a FFW project is likely to make the greatest contribution to food security if it targets the lowest-income and marginal communities, employs the poorest workers with the fewest other sources of employment, and opts for public works such as sanitation facilities (rather than, say, parks).

Cultural factors may also influence the way programs should be targeted to maximize food security impacts. For instance, this Study shows clearly that in Bolivia, where women have control over food (and men control cash income), and have the least access to alternative sources of jobs or money, UFFW can achieve the greatest impact on food security by paying food wages to lower-income women.

Although employment and infrastructure goals may sometimes conflict with food security and nutrition concerns, under most circumstances there is enough overlap to enable project designers to meet both sets of goals. The Bolivia Study shows that a nutritionally-vulnerable population can be targeted without increased costs to the program, without sacrifice of infrastructure output, and in a way that makes maximum use of the distinctive characteristics of the food ration in the Bolivian context.

In Bolivia's El Alto project, for example, the Municipality's development and infrastructure goals coincide broadly with food security and nutrition concerns. The potential for favorable nutrition and food security impacts were improved by targeting a clearly deprived area and then, within it, self-selecting women workers from families at high nutritional risk. Although this project's public works are generally not perceived as benefiting the workers directly, the improved (e.g.) roads will eventually strengthen food security by lowering food distribution costs and increasing general economic welfare.

In Santa Cruz, on the other hand, the potential food security and nutrition impacts were limited because the economic context produced a young, all-male work force, with few nutritionally vulnerable infants in their households. The Cochabamba group, composed of ex-miners with pensions, marketable skills, and possibilities for alternative private sector employment, also presented fewer opportunities for improving food security than the women of El Alto.

B. Adequacy of Ration Size and Commodity Composition

Ration Size. The ration size required to provide temporary food security depends on the money, time, and caloric energy that family members have to supplement their FFW ration. Conversely, more important than the size, composition and nutrient content of the ration are a) the time required to perform the tasks set for earning it, and b) the number of rations per month that a family is allowed to earn.

In other words, the same size ration that may be adequate if it can be earned in eight or nine days, becomes inadequate if it can only be earned in sixteen. "Increasing the ration" in one program, or reducing it in another, is not the solution. The "Ration" is only a convenient accounting entry. When Bolivian FFW participants said "the ration should be higher," they usually meant "make the tasks easier and let us earn more rations." Nutritional adequacy of the ration is also irrelevant, except in relation to the time required to earn it.

In cases like El Alto, where the ration now constitutes the major source (anywhere from 60 to 95 percent) of the family income and food budget of FFW participants, the current ration is too small to improve food security significantly. For example, a woman working four days (32 hours) for one ration is spending 80% of her work week to earn less than 50% of her family's needs. Under these circumstances, the program's principal benefit for most workers lies in the stability of the temporary employment, according to interviews, rather than any perceived increment to family income or food security.

If the UFFW Program continues to employ people almost full-time, even temporarily (so that the ration is almost the sole source of family food), the Program must allow workers to earn enough food to meet family needs. Otherwise, the Program must reduce the time required to earn the current ration, leaving families enough time to supplement the ration with other income. In El Alto, for example, the task sizes are such (it takes a minimum of 16 days to earn the ration) that the current prohibition against earning more is superfluous. In Cochabamba, where the work requirements are more modest, workers have been known to earn 200 percent of family food security needs, suggesting that some modification is needed.

The Program might also link opportunities to earn more than one ration to family size, nutritional needs, and total family income. Under present arrangements, all families receive the

same ration, regardless of size, giving small ones a windfall and leaving others in need.

Commodity Composition. The commodities included in the current ration are nutritionally inefficient, compared to local commodities that could be purchased, if more monetization proceeds were available. The 56 kgs received by most workers each month have a retail value of 85 Bs (e.g., in El Alto) and provide around 200,000 kcals. By spending 445 Bs (60 % of 742.20 Bs total monthly cost for least cost food basket) to supplement the ration, monthly nutrition needs for a family of 7 (504,966 kcals) can be filled. Review of local food prices, at each of the three sites, indicated that an equivalent amount of calories and nutrients can be obtained from a fully acceptable local menu (see Appendix III for illustrative least cost diet and retail prices in El Alto).

The corn meal and wheat flour in the ration are widely accepted by FFW family consumers in El Alto. Sugar and salt are also consumed fully without complaint in all locations. Corn meal was unacceptable in Santa Cruz and Cochabamba. Lentils in El Alto, beans in Santa Cruz, and bulgur, now rarely included, presented acceptability problems. However, the participating families almost unanimously express a preference for re-inclusion of vegetable oil in the ration. Oil has been replaced by increased amounts of flour and corn meal, to maintain ration value, since the Bolivian Government, in 1991, refused to allow further shipments. Use of monetization proceeds to buy local rice, sugar and iodized salt has been introduced, but is not likely to increase, since increased monetization is also stalled by Government policies.

Except to increase nutritional efficiency of the ration, by substituting oil, a lower-cost calorie source, if possible, for some of the wheat flour, there is little reason to modify the commodities. As Table 6 shows, the cost to the individual of providing 1,000 Kcals with wheat flour is 0.48 Bs (at 1.76 Bs/kg and 3,650 kcal/kg). The cost of providing the same energy from vegetable oil is 0.42 Bs (at 3.72 Bs/L and 8,800 kcals/L). It might make sense to offer different ration mixes at the different locations based on local food preferences.

TABLE 6

Comparative Costs to Individuals of Wheat Flour and Vegetable Oil (based on market prices)

Commodity	Price/Unit	Kcals/Unit	Cost/1,000 Kcals
Wheat Flour	1.76 Bs/kg	3,650 Kcal/kg	0.48 Bs/1,000 Kcal
Vegetable Oil	3.72 Bs/kg	8,800 Kcal/kg	0.42 Bs/1,000 Kcal

A partial shift from flour to oil, consistent with local food consumption patterns, would therefore reduce significantly the cost of delivering a stated amount of calories in the ration, without sacrificing any other nutrients. In other words, by not including vegetable oil in the ration, the contribution to food security is being purchased at a higher price than necessary. Participants receiving a ration without oil would behave rationally, if they sold wheat flour and used the money to buy oil.

C. Selection and Design of Projects

The selection of infrastructure works for FFW projects has important implications for family and community food security. USAID/Bolivia priority to basic sanitation (sewer and water), for example, contributes to the nutrient utilization aspects of food security by reducing disease and infection. Road construction and improvement, the other major infrastructure priority, supports general economic development, improves access to food markets and health services, and increases the value of assets such as buildings on the new and improved roads.

While there can be little question about the importance of most infrastructure improvements to food security and municipal development, however, the current approach to project selection raises questions about distribution of benefits and, hence, impact on family food security.

In El Alto, for example, although some female work teams are employed in their own neighborhoods, many others are obliged to travel to other sites. Because they perform only unskilled tasks, and the Municipality favors road-building projects, the work teams frequently become indistinguishable from wage labor, except for their even lower compensation. Their only direct benefits come from the food gained from temporary employment. When work and food end, participants return to their *status quo ante*.

Even when working in their own communities, where direct benefits from a project supplement their modest food benefits, the UFFW participants sacrifice far more than other community members, who, at most, pay a modest sum toward project costs. Payments to the work groups are so low that, even if they could not earn more elsewhere, group members are clearly doing more than their share of the "community effort." When working away from home, they sacrifice even more, since the general population enjoys lower-cost infrastructure because of their sacrifices.

While there are other good reasons for employing women close to their homes, such as reduced travel time and better child care, the advantages of direct benefits, however limited, constitute an important reason for reconsideration of project selection and work assignments. The more UFFW participants labor for the benefit of others, the greater becomes the income

disparity between them and the rest of society. Though the FFW safety net may keep them and their families alive, the contribution to family food security is modest and temporary at best. Even when supplemented by the direct benefits of an urban community project, the Program requires sacrifice from the group least able to bear it.

For sound development, food security and income distribution reasons, project selection and related aspects of UFFW (e.g., work tasks, compensation), in Bolivia and elsewhere, need attention. Compensating poor women at the food value equivalent of less than the minimum wage, for doing heavy work that benefits others far more than themselves, is inefficient development, a poor approach to food security, and produces an inequitable and uneconomic income distribution outcome.

Approaches to Project Redesign: The UFFW Program has not been designed as a food security program. Infrastructure construction and provision of employment are the primary goals. Nevertheless, for sound developmental reasons and because of A.I.D.'s new emphasis on food security, it is important to tilt Program design and implementation in directions favorable to food security, especially when this can be done without undermining primary goals.

Even when resource constraints keep compensation low in UFFW projects, the food security of participants can be improved, without increasing costs or jeopardizing infrastructure and employment goals of the UFFW Program, by redesigning projects to:

* increase worker productivity,
* improve household food consumption (e.g., through non-technical interventions that reduce food costs and improve health conditions), and
* increase sustainable benefits (e.g., through training, "career ladders," and linking the informal sector to the program).

The three redesign categories (productivity, non-technical interventions, and sustainable benefits) overlap, since training, for example, also improves productivity. In addition, some elements of redesign may be "profitable" (i.e., involve no net cost to the Program) and others may be "fringe benefits" or social development actions, taken for non-economic reasons.

1. Increasing Productivity

Unlike a private firm, where productivity gains often lead to layoffs, improved productivity in UFFW allows the Municipality to achieve higher physical output goals from a given budget of Title II commodities, with the same number or more workers. If it prefers, the Municipality can maintain a stable output level and use productivity gains to increase worker

compensation. Some combination of the two possibilities is the most common outcome.

If productivity is not increased, higher compensation for workers (the same ration for tasks requiring fewer days of work) becomes possible only by sacrificing physical output. El Alto Accion Comunal officials, concerned about the low compensation earned by workers, differed in their preferred balance ("tradeoff") between wage level and output. The municipalities, cooperating sponsors and the USAID appear never to have explicitly considered the matter.

It is beyond the scope of this Report to recommend a "right" incentive level (wage), since that depends on politics, equity concerns and much more. However, the Study team views informed consideration of the appropriate balance between economic and social goals, with full knowledge of costs and consequences of alternatives, to be a priority requirement for improving the urban Program. The question "What price infrastructure?" encapsulates the dilemma that decision-makers must address.

As early as 1988, a DEVRES Evaluation Report (DEVRES, 1988, p.2, Executive Summary) identified the need to redesign Bolivia's UFFW programs to increase worker productivity. However, because that report had another focus, it did not emphasize the very positive implications of higher productivity for family food security. For example, if productivity increases and workers can earn the same ration with less effort, there will be a reduction in the individual energy (caloric) drain that now decreases the net value of the ration to the household. The 1988 DEVRES insight remains valid and should have brought immediate response. The present Study builds on the earlier suggestions, which dealt primarily with provision of tools, by identifying other ways to make the FFW worker more efficient.

Discussion with municipal technical staff, in the three urban programs reviewed in depth, confirmed that a redesign package might include a) tools, especially wheelbarrows, b) child care (where women are FFW workers), c) provision of snacks and meals, d) group incentive payments or prizes, to encourage goal achievement, and e) training. Because it is clearly the most feasible and most effective redesign possibility, the following discussion deals primarily with improving productivity by providing workers with adequate tools. Appendix II is a Note illustrating how this can be done <u>at no net cost</u> to the Program.

Investing in Tools: The municipalities currently use much of the Title II food resource inefficiently, by allowing the unskilled workers employed by the Program to work at a level of efficiency far below their potential. Women carrying children on their backs, and nutritionally vulnerable men and women, working a full day on little or no food, perform poorly. In addition, when not provided with appropriate tools, since they cannot afford to buy them, the workers need far more time to complete tasks than would be necessary with adequate equipment.

Paradoxically, although the Municipality of El Alto boasts substantial amounts of heavy equipment and sophisticated technology, its Accion Comunal Program lacks enough (e.g.) picks,

shovels, rakes and wheelbarrows to enable workers to work effectively. In Cochabamba, where the Municipality does provide tools, worker productivity is significantly higher and, partly as a consequence, compensation is much better. As an additional return on investment in wheelbarrows, their contribution to reducing injuries, and their value in helping workers bring home the commodities received, should be noted.

Estimates of possible increases in productivity from better provision of tools, given by both engineers and workers in all three sites, ranged from 50% to 100% or more. As the Note in Appendix II illustrates, an investment in tools would enable the Municipality to increase infrastructure output, from a given amount of Title II commodities. As the Note also emphasizes, the failure to make the necessary investment stems from the special characteristics of the Title II Program, not from the absence of profitable opportunities.

Child Care as a Productive Investment: The same principles apply to child care and provision of nutritious food. Indeed, women working in the El Alto Project often worked with their infants bundled on their backs in an awayo (a woven shawl) and had three to five under five year-old children with them at the work site. These older children played around their mothers while they worked, often in unsafe conditions, distracting them from their work and putting themselves and their mothers at risk of injury.

All interviewed acknowledged that rudimentary child care would improve productivity, though estimates of magnitude were more modest than for tools. However, costs are also far lower. In simplest terms, using one ration to enable one worker to take care of everyone's children, instead of having her swing a pick all day, would allow the group to produce more. With a group of 50 workers, this reallocation of tasks would require no more than a three percent (3%) increase in productivity of other workers to complete her infrastructure work.

While far better child care would be desirable, interviews revealed that, in their present circumstances, women workers would not spend any money for it. Accordingly, design of child care provision in UFFW projects must distinguish carefully between self-financing models, such as the primitive arrangement mentioned above, and social welfare interventions financed outside the Program. The important thing is to recognize that child care need not be an act of charity, but can be a sound economic investment for increasing worker productivity. The Program could link up with or encourage the development of microenterprises devoted to child care provision, by increasing demand for this type of service.

Nutritional Supplementation on the Job: Research evidence makes clear that appropriate nutritional supplementation increases worker output, particularly in the case of workers who are poorly nourished and undertaking physically arduous work -- as in most Bolivian FFW projects.

The line between self-financing investment and social welfare intervention is hard to define in Bolivia, because the cost of feeding workers adequately, in relation to likely increases

of output, may not yield a "profitable" investment. However, when outcomes external to the Program are included, such as increased resistance to, and faster recovery from, disease, the food intervention becomes much more attractive.

The issue of cost-effectiveness can be avoided by waiting until productivity has been increased through other means, and then having the municipalities use part of the saving, that might otherwise be used to pay higher compensation, for a "fringe benefit" intended to increase worker food intake at the optimum times for increasing productivity. This will improve individual food security while simultaneously increasing output.

Group Incentives: Incentive payments, too, can be financed from productivity gains achieved through other means. Because the worker groups are cohesive and collaborative, modest rewards for exceptional achievement can motivate improved group performance.

2. Improving Impact on Household Food Consumption and Nutrient Utilization

In addition to measures that will increase productivity, there are still other ways to strengthen the food security impact of urban food for work, at little or no additional cost. The discussion that follows has little application to the Santa Cruz FFW model. In Santa Cruz, most FFW food is distributed through private construction companies, who are likely to have little interest in food security. This is another reason for seeking substitutes for the private construction contractors in currently involved in UFFW, which is as much a social as an economic program.

Linking FFW Participants With Other Social Programs. The worker groups offer an outstanding opportunity for linking other social programs to Food for Work. The product of years of community development work in Bolivia, they are impressive institutions with many outstanding leaders. In addition, the Accion Comunal social workers and promoters are resources with good potential for assisting worker groups to implement social and economic development activities that will improve family income and nutrition.

Without presenting a blueprint of actions to improve food security, and recognizing the difficulties of attempting them with limited resources, several obvious opportunities can be identified. The social workers spend unnecessary time on eligibility concerns in a Program where self-selection is inevitable. These social workers can reorient their efforts in ways more consistent with their training, and can certainly link worker groups with health agencies and training programs. They can also, with the promoters, work with groups to assure that the aged and infirm, if they must be in FFW, receive preferential treatment.

Collective transportation, buying cooperatives, and exploration of opportunities for training illustrate other promising possibilities. Many of the groups already do well at

cooperative efforts, especially in earning their rations. They distribute the rations in orderly fashion and it would be relatively simple, at the same time, to reduce the costs of vegetable oil and other food items by buying wholesale, and selling to each member the small amount likely to be purchased.

Assuring That Working Conditions Are Equitable, Within and Among Projects. The consumption and nutrient utilization by UFFW participants can be improved by tailoring work tasks to assure "equal pay for equal work." The UFFW Program suffers from inappropriate standardization of the tasks required for earning a monthly ration. The number of cubic yards of stone to be collected, for example, remains the same, regardless of differences in the conditions at various sites. Other inequities occur when women travel further, work longer and harder, under more rigorous conditions, for the same ration that many men earn for easier jobs.

In additon, many workers claim that uniform application of task quantities, and often the initial task requirements, are made without taking into consideration all the activities that are necessary to complete given tasks. As a result, the team was told repeatedly that large numbers of workers are regularly forced to spend substantially more than the "official" time to earn their monthly ration. In El Alto, the apparently rigid attitude of ADRA compounds this problem. This cooperating sponsor, said by El Alto engineers to impose the task measures, refuses to consider alteration of any until negotiation of the new annual agreement with the Municipality (the *Convenio*). With a new agreement due in September, it is essential that task-setting, and related output goals, be more flexible.

To address such issues, work groups need a grievance procedure for assuring that equally onerous work receives equal pay, regardless of who performs it. The promoters, who have become effective advocates for their work groups, should be able to appeal to a higher authority, such as a tri-partite body (USAID, Municipality and ADRA) on questions of task-setting. This is just another application of the general principle that, though they are temporary workers, effective management requires that the FFW participants be treated with the consideration accorded to other public employees.

D. Improving Consumer Behavior in Nutritionally Favorable Ways, Once Worker Compensation Can Be Increased

Survey data, focus groups and analysis of the net increment to family income and food availability indicate that the impact of Title II commodities distributed through UFFW, though substantial in the aggregate, has been negligible in relation to individual families. Although participating families enjoy a period of increased stability in employment, few experience a net increment in income and food availability sufficient to induce behavioral response. The literature on Title II Programs emphasizes that small, temporary increases in family food supply rarely lead to significant changes in long term behavior. The following discussion assumes that

UFFW compensation will be increased enough, by some combination of increased productivity and reduction of tasks, to assure significant addition to family food supply.

The data and interviews indicate that the best way to improve family food security, through changes in consumer behavior, is to increase food compensation of women workers, with commodities that are consistent (in quantity and composition) with local food habits. The food security impact of a given commodity budget can also be raised by substituting lower-cost calorie and nutrient sources for higher ones. UFFW inclusion of locally-produced iodized salt in the ration, appears to have increased consumption of that product.

Inclusion of other nutritional items (e.g., weaning foods) in the ration, or distribution of (e.g.) vitamin A or iron at job sites would also influence nutrition favorably. Non-formal education about using these items and about purchase, storage and preparation of other foods can also improve consumer behavior, but only if the UFFW participants are women. Most men interviewed during the Study were concerned only with monetary aspects of family food needs.

The precarious food budgets of the female UFFW workers make it likely that increases in acceptable food compensation will be consumed almost totally, in a manner consistent with nutritional needs of family members and with minimal reduction in the level of previous food spending. The presence of women in the market for labor paid with food indicates nutritional vulnerability and dire need.

In Santa Cruz, women cannot be reached by UFFW through construction work, but have been employed in small community projects, where schedules are more flexible and work less rigorous. In El Alto, where low food wages discouraged masculine participation and the Project evolved from prior Title II distributions to women's clubs, over 90 % of the UFFW work force are women. In Santa Cruz, the private contractors who use Title II commodities as partial payment of wages will not employ women. In El Alto, where ADRA distributes food wages directly to work groups, presence of women workers is unquestioned.

The Municipality of Santa Cruz distinguishes between "infrastructure" and "small community" projects. Observation revealed, however, that many of the small projects, such as classrooms and multi-purpose facilities, can also be classified as infrastructure, and, with revised program criteria, more could be included. Increased employment of women need not mean less infrastructure, though it may mean a different mix of construction. The absence of women in infrastructure construction stems from emphasis on large public works and the preferences of private firms seeking to meet contract goals.

In El Alto, with proper tools and municipal financing arrangements similar to those in Santa Cruz, women can be more productive, per unit of money or food, than men, since their wages are lower. Continued employment of women, in all programs, depends on keeping compensation low enough to discourage men from competing for the Title II commodities.

Because men are reluctant to work for food, however, real value of compensation can be close to equal, before masculine competition intervenes.

Although many interviewed spoke of cultural barriers against acceptance of food wages by men, this seems to be an oversimplification. In Cochabamba, where FFW compensation and earning limits are higher, many men participate in the Program. In El Alto, where compensation and limits are lower, few men do, suggesting that these factors also influence masculine participation. Furthermore, when men do work for food, Study survey data indicate that most of what they receive does get consumed by their families. Apparently, when worker families are sufficiently lacking in food, both women and men will work for food and share it with the rest of their families.

Without sacrificing infrastructure output, UFFW can improve family food security by paying food wages primarily to women, and at a level of compensation sufficient to provide a significant net addition to family food availability. This requires reallocation of Title II commodities and cash, by both USAID/Bolivia and the municipalities, to increase use of each as wages where its comparative advantage occurs. While a perfect match is unlikely, since availability of food for wages is more plentiful, any favorable reallocation will increase food security consequences of UFFW.

E. Achieving Sustainable Income and Food Security Benefits

Much of the impact from Bolivian UFFW disappears when Program participation ends. Sustainable impact can occur only through more permanent infrastructure projects that contribute to food security, and from longer-term sustainable improvements in earning capacity or other food security-related aspects of participants' condition.

With the advent of the new "wage payment" urban model, in which workers receive little benefit from the projects they help to construct, improvement of the workers' condition offers the best possibilities for sustainable impact. As a substitute for the direct permanent benefits received from many early community-based FFW incentive projects, individual improvement can help to alleviate the sacrifices and hardship associated with some UFFW.

Training: Training can offer promising opportunities for such improvement, while in some cases increasing productivity at the same time. It is clear, for example, that training related to jobs performed by FFW workers can improve productivity. However, the temporary nature of the employment means that most of the benefits from the training will be enjoyed by the trainee and future employers, not by the municipal program. Nevertheless, from a broader development perspective, job-related training is a good investment for the municipality. The

training, by providing more durable benefits than the job, also helps to compensate the workers for enduring the less attractive aspects of their work.

However, much of the value of training depends on identification and acceptance of "career ladders," opportunities for unskilled FFW participants to apply new skills to better jobs, both in the urban projects and elsewhere. Interviews elicited a few anecdotes about women who have become brick masons or now work for private construction firms. Unfortunately, though, concern for longer-term impact has not yet permeated the urban programs. Some workers do acquire new skills on the job, in urban forestry projects for example, but no systematic effort to encourage this occurs. Indeed, the unskilled work force, which encompasses almost all FFW participants seems to be viewed and treated as a separate and isolated group, entitled to nothing more than temporary employment at hard work for low wages. Only promoters and social workers expressed much concern expressed for the future of work group members.

All agencies involved need to recognize their biases and make special efforts to facilitate upward mobility for unskilled workers with potential. Workers should be encouraged to seek out relevant outside training programs, and be allowed rations for attending them. In addition, on-the-job training can be improved substantially by more sensitive efforts from supervisors and others. As productivity gains accrue, municipalities could use their savings from lower production costs, to finance worker training for other kinds of work.

VII. RECOMMENDATIONS

The following recommendations incorporate suggestions for improving the food security and nutrition impact of urban FFW projects in Bolivia. Many of them apply equally well to all FFW projects, whether urban or rural, in other countries as well. Where a particular recommendation applies with special force to El Alto, Cochabamba or Santa Cruz, that is noted.

The specific suggestions that follow emerge from an inclusive recommendation that:

> **all FFW projects, whether urban or rural, should be viewed as opportunities to use Title II commodities for improving food security and nutrition, even while continuing to emphasize employment and infrastructure goals.**

A. Targeting of Projects and Participants

1. FFW projects should be directed to participation by low-income women, and to small community-based infrastructure construction in the most deprived areas, with priority to families with highest food insecurity and taking account of the special nutritional needs of pregnant and nursing women.

B. Setting The Ration and Enhancing Nutrition

2. The calculation of rations, and the work required to perform them, should enable both male and female workers to earn at least 80% of the minimum wage, taking into account the following:

   a) additional calorie expenditure required for heavy work
   b) reductions in income from previous employment
   c) required fees to cooperating sponsors
   d) costs for tools, worker transportation, commodity transport, fuel, and other expenses

3. Bolivia UFFW projects should emphasize payment in locally-produced, widely-accepted commodities, with low cost per unit of calories or nutrients, and, if unfamiliar commodities must be included, distribution should be accompanied by information and demonstrations about proper preparation and use.

4. Through coordination with other programs, FFW projects should make:

   a) nutrition education materials
   b) nutritional supplements (e.g., Vitamin A, iron)
   c) collective preparation and serving of nutritious snacks and midday meals

   available routinely to participants, even in the absence of more formal nutrition-related program activities.

C. Enhancing Worker Compensation and Productivity

5. USAID/Bolivia, the cooperating sponsors and the municipalities should reconsider the current relationship, in each UFFW project, between the value of the ration and the tasks required to earn it, giving full consideration to equity goals and to the costs and benefits associated with alternative levels of compensation.

6. USAID/Bolivia, the cooperating sponsors and the municipalities should review alternatives for increasing productivity of UFFW participants and, when productivity has been improved, should share the benefits with the workers instead of increasing output goals.

7. ADRA and the Municipality of El Alto should explore alternatives for improving productivity and worker welfare by:

   a) continued investment in tools and equipment
   b) provision of child care at work sites
   c) provision of nutritional supplementation (meals) at work sites
   d) introducing special group incentive payments for task accomplishment
   e) building training and career ladders for women into the UFFW Program.

D. Administration and Financing

8. USAID/Bolivia and the Municipality of Santa Cruz should collaborate on efforts to a) reallocate commodities now being used as partial wages in large-scale UFFW projects, to the small-project UFFW component or other programs, and b) to transfer funds to the large-project component from the institutions and activities receiving the reallocated commodities.

9. The setting of tasks required for earning rations should:

   a) remain flexible throughout the *Convenio* (agreement) period
   b) be reviewed regularly to assure equal payment for equal work within and between projects
   c) be revised to assure the most nutritionally vulnerable FFW participants (such as those with the largest families and the least outside income) have priority in earning more than one ration
   d) include a grievance procedure allowing workers to appeal cooperating sponsor decisions about work tasks and their relation to earnings.

10. USAID/Bolivia should encourage El Alto's Municipality to make more effective use of their social workers and promotoras. Instead of monitoring eligibility and other administrative matters, they can become effective implementors of social programs and otherwise assist project work groups with:

   a) collective purchase of commodities
   b) participation in training for more skilled jobs
   c) assistance in job placement following UFFW participation
   d) finding and collaborating with existing NGO women's activities.

E. Sustainability

11. Cooperating sponsors and the municipalities should:

   a) reduce the time burdens on participants (e.g., by having participants work as close as possible to their homes, by minimizing travel to downtown offices for payment certification)
   b) scrutinize current costs and fees in order to minimize economic burdens of program participation (e.g., by purchasing tools with revolving credit funds, charging accident insurance to the communities, and making dental insurance optional).

APPENDIX I

Illustrative Estimate of the Net Caloric and Monetary Value of the Monthly Food for Work Ration in El Alto, Bolivia

Assumption: An adult female worker with a daily caloric requirement of 2,288 kcals and intake of 2,000 Kcals, earns an average of $1.5 Bs (US$ 0.39) per day, or 22 % of the average minimum daily wage (6.75 Bs or 135 Bs/month). Assume that she now enters the UFFW program and receives the following monthly ration for the 16 8-hour UFFW work days per m Month.

The Ration	Quantity Kg/Month	Retail Value Bs/Month	Caloric Value Kcals/Month
Wheat Flour	22.5	39.60	82,125
Corn Meal	16.0	22.80	58,080
Rice	13.0	16.90	47,320
Sugar	3.0	5.43	11,610
Iodized Salt	1.2	0.48	-----
TOTAL/MONTH	55.7	85.21	199,135

% of total caloric need/month, family of 7, covered by ration (199,135/433,500)	46 %
% of minimum wage covered by retail value of ration (85/135)	65 %

Caloric and Monetary Costs of the Monthly Ration to UFFW participant families:

1.	Net additional energy required for heavy physical labor (28,320 Kcals)	14 Bs
2.	Required payment to cooperating sponsor (incl. accident and dental insurance)	10 Bs
3.	Waste from higher cost-per-calorie of ration commodities compared to lesser cost alternatives (approx. 10%)	8 Bs
4.	Amount of previous earnings sacrificed by working on UFFW (16 days x 1.5 Bs)	24 Bs
5.	Cost of tools; more rapid deterioration of clothes and shoes; increased health costs; extra transport for food	6 Bs
TOTAL		62 Bs
NET ADDITION TO REAL INCOME OF THE UFFW PARTICIPANT (approximate)		23 Bs
Net Addition as % of Minimum Wage (23/135)		17 %

1. The assumptions for daily caloric requirement is based on:

   a. an average per person energy expenditure of 2,288 Kcals for light activity

   b. Net additional energy expenditure of 1,770 Kcals per day based on 5 hours of heavy physical activity on the UFFW program (average 5.9 Kcal per minute expenditure for 5 hours of UFFW work)

   for a total daily energy expenditure of 4,058 Kcals per workday.
   This translates to 28,320 Kcals additional per month (16 working days) over the 68,640 Kcals per month (30 days) to cover light activity or 96,960 Kcals just to cover the UFFW participant's energy requirements.

2. The estimated daily intake of 2,000 Kcals/day is a conservative estimate.

3. The estimated daily earning is based on the assumption that a woman in El Alto, if she were not on the UFFW program, would be able to earn at least 1.5 Bs per day by washing clothing, selling knitted garments, or selling fruit. This represents about 22 % of the average minimum daily wage of 6.75 Bs. This is a very conservative assumption.

Caloric Costs Paid by FFW Participants: The current ration in which vegetable oil has been replaced with rice, sugar and salt, provides a potential additional intake of 199,135 Kcals per participant family par month (see Table above for computation). The average participant family is comprised of 7 members (from recent food consumption survey data among UFFW participants in El Alto). According to a conservative estimate by the team's nutritionist, FFW in El Alto requires such intense physical exertion that participants are actually working off about 28,000 Kcals or 14 % of the 199,135 Kcals they receive monthly in the program. This conclusion was reached on the basis of an estimated average 1,770 Kcals of additional energy expenditure per 5 hours of heavy physical activity on UFFW per 16 day work-month.

As for possible substitution effects, the survey indicated, and team observation corroborated, that little sale or barter of the ration occurs in El Alto. The high value of the donated commodities simply provides consumers with higher cost calories than they would otherwise buy, unlike situations in which relative prices and market conditions encourage sales of commodity wages to purchase lower cost calories.

The Economic Cost to Participants: In addition to the energy expenditure, which reduces the ration's net value to participant families, the money costs imposed by the program further decrease the net. The ration cost, which includes some obvious components and others more hidden, is a significant percentage of its retail value. Moreover, because the commodities are less often a supplement, and are more often the primary or only source of family earnings and food consumption, the high cash burden of FFW puts participants in a particularly serious bind.

They have few sources of cash income, due to lack of employment opportunities, lack of skills, and the time-consuming and exhausting nature of FFW. Therefore, they must consume virtually all the commodities they earn, and cannot even acquire cash by selling a portion of the food. This leads to a seriously unbalanced diet, with only a limited variety of items in the food basket and a high percentage of the diet comprised of the four ration commodities (see Appendix III).

Under the *Convenio*, each worker in El Alto pays a fee of 7.50 Bolivianos (US$ 1.94) per ration, to cover ADRA's costs for packaging, storing, and distributing the donated commodities, as well as for accident insurance and dental care. However, workers and promotoras repeatedly cited charges amounting to 10 Bs per ration, plus additional fees for transporting the food from the job site to their homes.

The costs to participants do not end there. First, ADRA's failure to provide project tools means that workers must purchase their own, at an average cost of 5 Bs per monthly ration (20-40 Bs for tools every six months). In rural FFW projects this item would not be an issue, for *campesinos* (farmers) own their own tools as a matter of course. However, this is not at all the case for urban workers, who repeatedly cited tool purchases as a serious drain on their meager resources.

Additional but less obvious costs of program participation include approximately 4 Bs per ration for sturdy shoes and warm clothing, both needed to avoid illness and injury. This cost further reduces the net increment to food and income received by participants. In reality, none of the workers observed wore adequate work shoes, hard hats or appropriate clothing (the women all wore dresses); the flimsy shoes and garments they now wear deteriorate rapidly. Fuel costs for the long time needed to cook donated lentils and lima beans, the cost of travel to distant job sites, and the cost of bringing 100+ pound bags of food to workers' homes, reduce still further the net transfer of value, though specific calculation is here omitted. Finally, rumors difficult to confirm suggest that some workers are also paying illegal fees to municipal employees for removal of stones (this sum has also been omitted from the calculation). Such rumors illustrate the political nature of UFFW almost everywhere. However, the El Alto project appears to be better than most in this respect.

Like the cost of tools, the additional costs cited above, which are required for safe and effective employment, lie beyond the reach of many participants. They pay, instead, through increased incidence of injury and disease, lower productivity, and poor morale. Unfortunately, for some participants, the costs may also take the form of poorer nutrition. Because workers are not allowed to earn more than one ration (and would scarcely have the time or energy to do so, in any case), and the food typically serves a family of five, it is easy to see why FFW in El Alto provides only a modest contribution at best to family nutrition and food security.

APPENDIX II

A Note on Maintaining Output, While Increasing Compensation through Higher Productivity

The positive consequences of increased productivity for food security, without reducing attainment of primary Urban FFW goals, can be illustrated by the following example:

Assume that a group of 30 workers now earns thirty rations, with a value of $16 each, for a task requiring 16 days of work from each group member. Assume further that, with five wheelbarrows and some combination of 20 picks and shovels, they could perform the same task with 8 days work per person. Although this 100 % increase in productivity is high, for illustrative purposes, engineers and workers agreed that adequate tools would raise productivity dramatically.

If the project tasks are increased, so that the workers still receive one ration for 16 days of work, they will be unhappy but no worse off. In this case, the municipality would be getting twice as much output for the same volume and value of commodities. Workers might even expend less energy than previously, to produce the same output. If, on the other hand, the work task remained the same, workers would earn in eight days what used to take them sixteen to receive, a doubling of compensation. Even if they were only allowed to earn one ration per month, they would still have eight more days to earn other income. With this result, the municipality would still achieve its infrastructure goals with the same amount of commodities, and the workers would enjoy a substantial improvement in their income and food security. In any event, it is clear that the 100 % increase in productivity makes available a "dividend," "profit," or benefit that can be divided between improved compensation for the workers and more efficient and greater production by the Program.

If cost of the tools is amortized in project budgets, the improved productivity can be maintained permanently. As tools wear out, they can be replaced with funds accumulated for that purpose. The net benefit from higher productivity depend on the cost of the tools, the percentage of output increase, and the rate of interest. Money used for tools could have been invested at interest, so a charge for that loss (the "opportunity cost") is part of the cost of buying tools for the Program.

The following illustration of the profits from investing in five wheel barrows and twenty picks/shovels, uses real wholesale prices obtained in the El Alto market, with various small discounts applied for quantity purchases. They are, if anything, high, since the Municipality should be able to do better.

If, for example, the five wheel barrows and 20 other tools that double productivity cost a total of $ 245.00 (15.3 rations at $16 each), and last six months. Tool cost for the three-month project will be $122.50, or 7.65 rations, since the tools can be used for another three months. If interest on the $245.00 for three months is $15.31 (assuming an annual rate of 25 %), then the cost of having the tools is a total of $137.81. Subtracting this amount from the increased productivity of $240 (15 rations) leaves a net "profit" of over $ 102.00, available to increase output or worker compensation. This profit equals a return of almost 42 % on the original $245 investment in tools. If the workers' initial wages had been higher, the profit would also be larger, which explains why developing countries favor labor-intensive production.

Predicted output increases in the example have been exaggerated slightly to illustrate the principle involved. However, predictions of productivity increases during interviews were all between 50 % and 100 %. With careful purchasing and good supervision, investment in tools should yield a very satisfactory return.

Similar investments in child care and on-site food supplementation for workers can also be designed to produce favorable rates of return. That these improvements have not been initiated stems from the special financial circumstances and non-economic program goal (to provide temporary employment) of the Urban Food for Work Program.

It would pay the Municipality of El Alto to sell Title II commodities and buy tools. It would also pay to borrow money for the purpose. Either action would increase the amount of infrastructure obtainable from a given volume of commodities. However, monetization of the commodities, to substitute capital for labor, reduces the amount of employment that would be generated from the Title II commodities. Temporary employment is an important goal of the Program and the commodities are required to be used <u>only</u> for "incentive payments" (wages) for workers. Borrowing for the investment would not reduce employment, but the Municipality's borrowing power must be used for other purposes.

It would also pay the workers to "invest" in tools, in order to increase productivity and compensation. However, at current compensation levels, it would be cruel and unusual punishment, as well as an administrative nightmare, to try this method. The "taxpayers," community members who pay the non-labor costs of the infrastructure projects, could be charged their share of the tool costs associated with their projects, but they would consider it an extra charge to pay. Because Food for Work pays the higher costs of inefficiency, community members gain nothing by paying for tools. However, in the aggregate, <u>all</u> taxpayers do benefit because, with tools, the municipality now becomes a more efficient producer of infrastructure.

The ADRA FY 92 budget includes $ 19,948 for tools to be used in El Alto, but the money has not yet been spent. Using these funds to create a revolving fund for tools, with the fund to be replenished out of "taxes" collected from communities enjoying project benefits, and <u>not</u> from the worker groups, would be a useful pilot test of one tool-financing alternative.

Despite possible community resistance, and even if ADRA does not move on the tool purchase, it should be feasible to include tool costs in the non-labor costs of project budgets, and charge them to the communities receiving projects. The net additional cost per capita would be small, especially in densely populated areas with some residents above subsistence level. If tools cost $300, for example, and there are 100 better-off people in the project area, even paying the full cost of the tools, over a six month project, would cost each taxpayer only $.50 a month. The worn-out tools could then be given to the work groups, at project conclusion, as partial compensation for the inordinate sacrifices they make relative to others in the community.

This simple example offers an outstanding opportunity to strengthen the Democratic Initiative, by introducing sound private business principles into municipal finance. By linking taxes, or project charges, to improving productivity, the example also begins the process of institutionalizing sound public administration. Perhaps most importantly, the example shows how the Urban Food for Work Program can, by increasing productivity, increase the income and food security of workers, without reducing achievement of infrastructure and employment goals.

APPENDIX III

Local Least-Cost Diet, La Paz, Bolivia

FOOD ITEM	Quantity FAM/Mo (Kg)	Energy (Kcals)	Protein (g)	Cost/FAM/Day (Bs)	Total/Month (Bs)
DAIRY	44.10	27342	1764	2.2	66.00
Liquid Milk					
MEAT	13.02	23184	2604	1.5	45.00
Beef					
Chicken					
Fish					
EGGS	8.61	12726	945	1.5	45.00
Poultry Eggs					
GREEN/YELLOW VEGETABLES	10.08	6048	100.8	1.2	36.00
Chard					
Parsley					
Carrots					
Squash	12.60	7686	252	0.8	24.00
OTHER GREENS					
Tomato					
Onion					
Fresh Beans					
Fresh Peas	32.28	19404	352.8	1.4	42.00
FRUIT					
Plantain					
Orange	56.70	202398	6237	3.37	101.10
CEREALS					
Rice					
Wheat					
Quinoa					
Corn	7.35	28224	1911	0.70	21.00
LEGUMES					
Dried Beans					
Dried Peas					
Peanuts or Lentils	46.20	70224	924	4.00	120.00
ROOT CROPS					
Potato					
Oca	6.78	26670	—	0.5	15.00
SUGAR					
Sugar	9.45	81480	—	0.9	27.00
FATS					
Oil					
Butter					
TOTAL		504966 Family/Month	15292.2		742.20
		Family /day			24.74

Source: Lic. Rosario Alurralde, Nutrition Consultant, Bolivia.

For a family of 7 members (the average size among UFFW participants) following a least-cost diet, food costs are 742.20 Bs per month.

APPENDIX IV

LIST OF PERSONS INTERVIEWED

USAID/Bolivia
Avenida 16 de Julio
Casilla No. 1628
Edificio Bisa, 1er Piso
La Paz, Bolivia
tel: 320896

Jonathan A. Sleeper	Deputy Director, Agriculture and Rural Development Office
Salvatore Pinzino	Title II Food Aid Advisor, ARD Office
Arnulfo Peñalosa T.	Title II Logistics Advisor, ARD Office

A.I.D./Washington

Roberta Van Heften	Food Policy Advisor, LAC Bureau

Programa de Monetizacion
Calle Batallon Colorados No. 24
Edificio El Condor
Casilla 15025
La Paz, Bolivia
tel: 357965

Ademar Pinaya Z.	Director

Planning Assistance
La Paz, Bolivia
tel: 366921, 373586

Charles Patterson	Director, Bolivia Programs

EL ALTO

Alcaldia de El Alto

Miguel Aramayo Esquivel	Mayor
Luis Perez Villarreal	Director, Accion Communal
Ruben Dario Prado	Architect, Director, Public Works
Gonzalo Asturizaga Gironzzini	Architect, Chief Technical Advisor
Engineers	
Social Workers	
Promoters	

Focus Groups with Members of the Following Work Groups:

Grupo Andino	(Working at Bajo Milluni)
Mario Quispe	President of Work Group
Via El Carmen	
Via Albaroa	
Rio Seco	

ADRA/La Paz
Calle San Jiminez
Miraflores, La Paz, Bolivia
tel: 324451

Heber Michel	Director, ARDA/Bolivia
Jose Silvestre	Director, ADRA/La Paz
	Director, El Alto Warehouse

OFINAAL
Carrasco No. 1323
La Paz, Bolivia
tel: 355751, 364051, 359703

Mirna Cuentes Alarcon	Chief of Control and Evaluation Division of Projects
Fernando Vargas M.	Engineer, Chief of Projects
Vincenzo Bellini	Chief of Party,
	European Economic Community Mission

CARITAS/La Paz
Avenida Saavedra No. 1218
La Paz, Bolivia
tel: 323525

Jose Murguila	Engineer, Director, UFFW

Other

Lewis Thornton	Consultant

COCHABAMBA

Alcaldia de Cochabamba

German Diaz M.	Engineer, Supervisor of Public Works
David La Fuente	Engineer, Area Chief

Edgar Orellano Morato	Coordinator of Accion Communal
Jorge Quispe Z.	Architect, Supervisor of Public Works
Miguel Zenteno P.	Engineer, Supervisor of Public Works

Focus Groups with:
Quillacollo Work Group
Contractors

Caritas Arquidiocesana Cochabamba
Avenida B. Galindo Km 6
Casilla 629
Cochabamba, Bolivia
tel: (42) 41877

Mary U. De Deheza	Executive Secretary, Caritas
Jorge Jordan	Engineer in charge of Public Works, Caritas

SANTA CRUZ

Alcaldia de Santa Cruz de la Sierra
Casilla de Correo No. 754
Santa Cruz de la Sierra
Bolivia
tel: (3) 322268, 338393

Percy Fernandez Anez	Mayor
Jorge H. Hurtado	Director, Captacion Recursos Financieros, Alcaldia
Fredy Landivar Araoz	Sub Director Captacion Recursos Financieros, Alcaldia
Elias Clavijo	Technical Advisor, Alcaldia
Andicina S. de Llanos	Technical Advisor, Alcaldia

Fondo de Desarollo Municipal
Calle Rene Moreno No. 153
Casilla 754
Santa Cruz, Bolivia
tel: (3) 338103, 336210, 336770

Raul Justiniano Aponte	Executive Director
Sofia Zamordano	Administrative Director
Juan T. Justiniano	Chief, Large Project Department

Construction Companies

Luis Velasco Suarez	President, Camera Bolivian de la Construcion (Bolivian Chamber of Construction) Owner, Empresa Suarez
Jose Fernando Aguilera	Empresa Constructora IDSA
Juan Ardaya	Technician, INCOP
Eduardo Daza	Project Engineer, Empresa CONICA
Tomas A. Suarez	Manager, Empresa TERRA
Luis Fernando Vinconti	Empresa Construcion Ortiz

Interviews with Workers:
Work Group, Km 9 Canal

ADRA/Santa Cruz
Carretera Carmelo Llanor, No. 23
Zona Norte
Santa Cruz, Bolivia
tel: (3) 350716, 335239, 321349

Genaro Tueste	Director, ADRA/Santa Cruz
Alberto Bejarano	Technical Director, Regular Programs
Pedro Atidobo	ADRA Warehouse Manager

Plan Internacional/Santa Cruz
Carretera Cochabamba, Km. 9
Casilla Correo 1729
tel: (3) 336886

Martin Fanhaengel	Director, Plan/Santa Cruz
Roberto Sandoval	Engineer, in charge of Programs

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