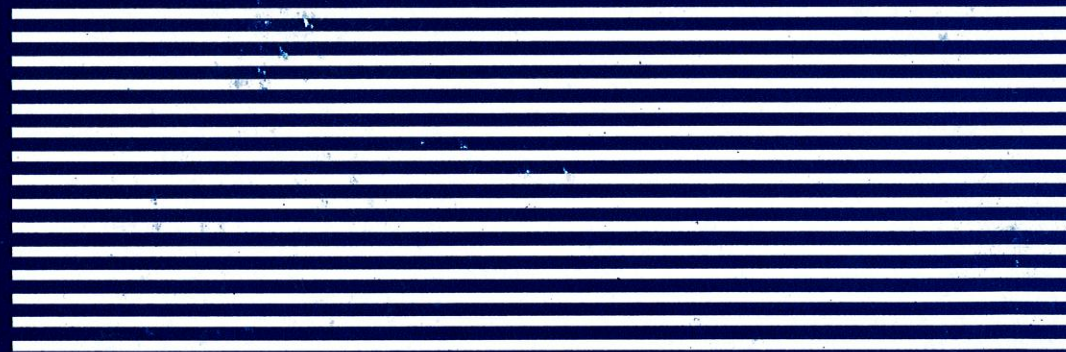


The Mesa Book



Cases in
Migrant
Environmental
Services
Assistance

Resource ID#: 3076

Mesa Book : Cases in Migrant Environmental
Services Assistance

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THE MESA BOOK

INTRODUCTION

WATER AND MIGRANT HEALTH

Picture a colonia in South Texas. The semi-dilapidated houses have individual wells and septic tanks. A few use handpumps and privies. The land drains poorly, and during heavy rains, wastewater is swept to the top of the ground. Some of the wells have been contaminated. It is hard to obtain a central water and sewer system because the residents live here only part of the year. The rest of the time, they are in other states at work in the fields.

Now look at a labor camp in Central Florida. Much of the year, the dormitory-like facility stands empty. During the harvest season, the tiny rooms are packed with migrant workers. There are only a few water taps, all outside, and one communal toilet facility that is supposed to discharge into a nearby sand filter. But this treatment facility has not worked for years, and the wastewater simply flows into an adjoining ditch. The stench is sometimes unbearable, and there are many flies. Sometimes children wade in the ditch.

Switch to a field in Delaware. There is only one portable toilet to serve fifty workers. There is no facility for washing hands in or near the field. The workers usually cannot wash before eating, even when they return to the camp at night.

Finally, visit a migrant health clinic in California. The waiting room is full of people; a majority are fretful children. Many of them are suffering from diarrhea. They have been treated at the clinic before and will be treated again because they return to the same environment that sent them to the clinic in the first place.

These are familiar scenes to those who observe the streams of migrant farmworkers who regularly harvest many of the nation's crops. Poor water supply and sanitation facilities are additional burdens these much-encumbered workers must bear. And it is the children who suffer most from the diarrhea, shigellosis, giardiasis, and worms associated with poor quality drinking water, a lack of water for washing and cleaning, and substandard sanitation. Adult bodies tend to adjust to a poor environment, although it is reflected in impaired health and a lowered life expectancy, but the children have not learned to live with the pain.

The problem is all the worse because it is subtle and hidden. Poor water and sanitation are not revealed clearly in clinic encounter statistics because common water-related diseases also have other causes. Was the salmonellosis caused by contaminated water or a spoiled bologna sandwich? Does the diarrhea stem from poor sanitation or the stress of travel? Since there is a tendency to attribute diseases to the behavior of migrants rather than to the facilities which serve them, water-related diseases often go unreported.

These diseases thus tend to have little impact on public consciousness in America. When a killer such as typhoid surfaces (as it occasionally does), there is swift remedial action, but diarrhea among children does not evoke a similar response. For these reasons, it is difficult to put a number on the connection between water and migrant health. But it is easy to put a face on it. It is the face of a migrant child in distress, a distress caused or certainly heightened by poor environmental conditions.

This casebook was prepared to help migrant health centers deal with these conditions. Chapter I discusses the general problem of improving environmental health and the work being done through the MESA (Migrant Environmental Services Assistance) project. Chapters II and III describe selected cases of assistance provided through MESA over the years. Chapter IV reflects on these cases and offers some "lessons learned" through the project. Finally, there is a series of appendices, including lists of NDWP affiliates, and individual MESA projects, both alphabetically and chronologically.

CHAPTER I

IMPROVING ENVIRONMENTAL HEALTH

The term "environment" refers to the space that surrounds an individual at any given time. "Health" means the absence of disease or of any illness that lessens the individual's ability to function well in society. Although difficult to document and quantify in specific cases, the connection between environmental conditions and health is not disputed today. A poor environment always has the potential for causing or spreading disease, and it does so in fact in many cases.

A. The Threat to Migrant Health

For most people most of the time, the immediate environment is provided by the home and the workplace. This is especially true for the rural poor and even more especially true for a segment of this population--migrant and seasonal farmworkers. For this reason, farmworkers and their families are an extremely at-risk group in terms of health because the environmental conditions they face are commonly unsatisfactory.

Many of these environmental conditions are associated with water supply and waste disposal. Water supply is a factor both in terms of quality and quantity. If the quality is poor, i.e., if there is contamination, water is a disease carrier. If the quantity is insufficient, disease may be transmitted because of a lack of water for washing--bodies, dishes, clothing, floors--or for disposal of human wastes. Faulty methods of excreta disposal are a common method of disease transmission. In addition, haphazard disposal of solid waste often creates breeding grounds for disease carriers such as flies and mosquitoes. When poor water supply and waste disposal are combined with substandard housing--lack of screens on windows and rodent infestations, for example--there is a constant threat to human health.

Partly because they are usually temporary and partly because of neglect, migrant home sites often lack the minimum necessities for decent living:

- Housing conditions are poor, and migrants may sleep in "non-housing," such as cars and trucks or even under trees and bridges. Where farm labor housing is available, it may be little more than shacks that are oppressively hot or that let in rain and insects.
- The water supply, even if it exists on-site, may be poor in quality, even contaminated, or lacking in quantity so that fecal-oral diseases are easily spread.
- Solid waste is not collected and thus piles up around houses, attracting disease-bearing insects and rodents.

Poor environmental conditions for migrants are not limited to their places of abode. At the workplace, migrant farmworkers have long had to labor under conditions not endured by other workers:

- Field sanitation lags far behind the standards of industrial workplaces. Drinking water may not be readily available; toilet facilities may be a clump of trees after a long walk, after which there is no water for hand-washing.
- Pesticides may be used in the fields where migrants work, contaminating clothing, bodies, and the produce being harvested.

Given these conditions, it is not surprising that migrants carry a heavy burden of chronic ailments such as diarrheas, parasites, and even more serious diseases such as hepatitis and typhoid. A high incidence of urinary tract infections and cases of pesticide poisoning further attest to the special health risks of the farmworkers.

B. The MESA Project

The primary means whereby the Migrant Health Program (MHP) in the U. S. Department of Health and Human Services (HHS) carries out its mission is the network of health centers located in areas of high migrant concentration throughout the United States. With funding from HHS-MHP, the centers provide primary health care to thousands of migrant families each year.

Although these health professionals are concerned about environmental health, they often find it difficult to respond programmatically because their funds and staff must largely be applied in offering medical care to their patients. Environmental issues not only consume scarce resources, they are also difficult to address as a normal part of the doctor-patient relationship since they often require community-wide solutions. For these reasons, health centers usually look to other organizations to provide guidance and assistance when trying to respond to environmental needs in their service areas.

To help meet this need, the Migrant Health Program has given financial support to National Water Project (NDWP--it began as a demonstration project, and the "D" has been retained in the acronym). NDWP, in turn, has provided financial and technical assistance to local health centers for discrete environmental projects.

NDWP is a national nonprofit organization headquartered in the Washington, D.C. area. It maintains a small central staff and working relationships with local affiliate organizations in all parts of the country (See Appendix A). The organization has worked in the field of rural water and sanitation since 1972. In this 15-year period, it has carried out projects worth nearly \$22 million and has received funding from ten federal agencies and a number of foundations. In addition to its work in American rural areas, NDWP has carried out two major projects directed at developing nations in the Third World.

Since 1980, when it conducted a demonstration program called "Better Water for Migrant Workers," NDWP has been working with migrant health centers and the MHP to improve environmental conditions for farmworkers. For seven years, NDWP has developed projects throughout the continental United States and Puerto Rico. Since 1983, the project has been called the Migrant Environmental Services Assistance (MESA) project. Including efforts currently in process, the total number of local projects supported by MESA funding exceeds fifty in number (See Appendix B and Appendix C).

Since the intent of MESA has always been to assist as many health centers as possible, individual grants are small--average about \$6,000. While money in these amounts might not appear to be significant, health centers find that they can accomplish a lot with only a little money if there is flexibility in its use. Special tasks that may not represent authorized expenditures under large grant programs can often be accomplished through the MESA route.

In addition, MESA funds are often used to "leverage" other funds. For example, a major grant from the Farmers Home Administration (U. S. Department of Agriculture) may hinge upon the completion of a preliminary engineering report, but FmHA funds cannot be used to produce the report. MESA funds can cover such costs, and thus a small grant brings a much larger one into being. Over the life of the MESA project so far, the ratio of funds leveraged to MESA project funds spent has been at least five to one and possibly more.

Another feature that makes the MESA project useful for the health centers is its relative informality. Health centers do not have to prepare lengthy proposals or fill out reams of forms in order to get the money. A phone call and a detailed letter will often do the trick, although the MESA staff sometimes makes site visits before making funding decisions. Also, paper reporting is kept to a minimum since the projects are expected to be of short duration, the range of activities is limited, and the amount of money involved is small. Of course, all program funds are carefully tracked and accounted for.

C. Local Project Selection

In recent years, there have been sufficient funds available to fund 10-12 local projects annually. Obviously, there are more migrant health centers with environmental problems than this, so a selection of projects must be made. In general, eligible projects are funded on a first-come, first-served basis until the year's allocation is consumed. (MESA is funded by HHS on a year-to-year basis.) Usually there is a backlog of at least a few projects waiting to be funded each year.

In determining if projects are eligible for funding, the MESA staff uses two rules. First, the activity for which financial support is proposed must benefit a population consisting predominantly of migrant and seasonal farmworkers. MESA does not make a distinction between migrant and seasonal workers in the belief that the farmworker who stays at home today and works seasonally may be forced to become a migrant tomorrow. Nor is a distinction made between migrants who are in their "home-base" and those who are "upstream."

Further, elaborate measures are not used to decide if an area has a "predominant" migrant concentration. The objective of the MESA project is to help people, not make distinctions. In the end, a project site is

regarded as an area of migrant concentration (and thus eligible for a funded activity) if the local migrant health center says that it is.

The second criterion for funding is that a migrant health center (or project) must be involved in the activity for which funding is proposed. Normally, the center is the recipient of the MESA funds and the institution responsible for implementing the project. However, this is not required. Sometimes, there are other local organizations with which the health center works on development projects and which will actually implement the MESA-funded project. For example, a number of NDWP affiliate organizations (such as National Council of La Raza, Self-Help Enterprises, Rural Community Assistance Corporation, Military Highway Water Supply Corporation, Virginia Water Project, and Great Lakes Rural Network) work with migrant health centers.

In these circumstances, it seems unnecessary to insist that the health center be a pass-through for the funds, so the implementing organization is funded (and held responsible) directly. In such cases, however, the project must have the written blessing of the health center, which must also stand ready to assist with the work as required. Often, other local organizations--private firms, nonprofit corporations, government agencies--are involved in the work as well.

In addition to the two mandatory requirements for projects, there are several factors in the "preferred" category. MESA prefers discrete projects that can be completed within the fiscal year during which funding is made available. If the work is not completed, the funds obligated must be carried over into the new fiscal year. Although NDWP has always been allowed by HHS to carry over unexpended MESA funds, it cannot guarantee that this will always be possible. In any case, it is not good business practice to allow projects to drag on in various stages of completion.

However, NDWP cannot afford to be rigid on the point because the one-year requirement conflicts somewhat with another "preference" factor--leveraged funds. MESA prefers projects where the funds obligated will form part of a larger funding package and will help to leverage those funds into place--an FmHA loan, a community development block grant, a state grant, a foundation grant, etc. The problem is that, in such cases, project completion depends upon outside agencies and not just the hard work of the MESA grantee. Thus completion in one year is not always possible. Yet refusing funding in such cases might jeopardize a major effort. In one case in Michigan, MESA was able to hold its grant in an obligated state for nearly three years, and an outstanding project, involving FmHA funding, was finally brought to fruition, but this was an exceptional case.

Finally, proposed projects are especially favored if they are in areas (federal regions, states, localities) where no MESA project has yet been conducted. Again, this criterion cannot be dogmatically applied because neither migrant populations nor environmental problems are uniformly distributed across the country. There have been MESA projects in eight of the ten standard federal regions. The exceptions are I (New England) and VII (Great Plains), both regions with fewer problems.

Seventeen states (and Puerto Rico) have had MESA projects, and this number includes most of the states with significant migrant populations. In a few cases, two MESA projects have been conducted with the same migrant health center. It is hard not to return to people who have performed well, but NDWP tries to give everyone a chance.

In summary, all MESA projects serve migrant populations in some degree and involve migrant health centers in some capacity. Most projects are completed in one year, and some projects leverage other funds. New territories are preferred to previous project sites. These somewhat flexible measures are the standards used in project selection.

The process used in funding projects is relatively uncomplicated. Each year, NDWP reminds all migrant centers and projects, by letter and sometimes by phone, of the availability of MESA assistance. In addition, by now, there are many centers that have had experience with MESA. NDWP also relies on its affiliate organizations in migrant areas to be alert for project possibilities, and sometimes projects are suggested by the MHP staff.

This amount of publicity is sufficient to generate requests for project assistance fairly early in the fiscal year that equal or exceed the amount available. The requests usually come by letter or phone. The MESA staff may request further details on the proposed projects, and may make a visit to the site to talk to the prin-

cipals. In particular, the staff is concerned about the specific items for which the money will be spent, the timing of project activities, and a clear statement of project outcomes.

When all the criteria have been met, a letter of funds obligation is sent to the proposing organization. Organizations are commonly asked to submit monthly a short progress report (usually in letter form), and funds are released as work is completed.

D. Technical Assistance

Since some migrant health centers, being essentially primary care providers, have little experience in environmental matters, NDWP also provides technical assistance. This includes direct assistance to individual projects as requested and may relate to needs assessments, funding possibilities, matters of community organization, or even facilities design and construction.

From time to time, consistent with program resources, special training sessions directed at the stages in the development process have been held for migrant health personnel. In addition, NDWP is willing to provide technical assistance to individual centers in establishing environmental programs, including the offering of advice on budgeting, staff allocations, program planning etc. The "how-to" aspect of environmental facilities and program development in a rural setting has, of course, been an NDWP specialty for many years.

In addition to direct assistance, help is also provided in the form of research and information. Two publications have been prepared with migrant health centers as the intended primary audience. One of these, Water and Sanitation Assistance Organizations, is a directory that lists technical assistance organizations by region and state that may be able to provide assistance with water and sanitation problems.

The MESA project also prepared a booklet to help rural health centers get a better understanding of water quality problems. Guide to Water Quality Problems and Solutions offers some help related to problems health centers see in their clients' health and in the housing and communities where they reside.

Another NDWP publication, Water and Human Health, although developed for an international audience, has been very useful to migrant health centers. The book is an overview of the water-health connection and discusses the various pathologies associated with waterborne diseases. The book has been widely distributed in the migrant health network.

Although the bulk of MESA work has always been done in the field--an emphasis that is expected to continue--NDWP has also played a role in policy-related activities nationally. These include pressing for a national field sanitation standard, working with other organizations to assure funding for migrant health programs, and participating in several inter-agency coordinating groups.

In sum, the MESA project is implemented locally by migrant health centers to which NDWP provides financial and technical assistance services. These services include:

- Needs Assessments
- Resources Surveys
- Seed Money
- Technology Evaluations
- Engineering Reviews
- Financial Packaging
- Program Development Assistance
- Information Services

E. Cases of Assistance

The field projects that MESA has funded run the entire gamut of environmental settings, problems, and solutions. The settings move from the fertile plains of Florida to the fertile valleys of California, from the orchards of south Texas to the orchards of Michigan, from the hills of North Carolina to the hills of Washington. The problems and solutions cover a range of technical and policy factors.

The projects may be divided into two general groups: facilities development and program development. In facilities development projects, the activities are intended to result directly in some type of tangible environmental facility--new or repaired housing, a water system with pipes and pumps, a waste disposal system with tanks and leach fields, a levee to prevent flooding. The actual construction of the facilities need not occur as a part of the project.

Program development projects may also lead to facilities in place, but they do so more indirectly. For example, a water testing program to show the need for better facilities is program development. Such projects may also be focused on the use of facilities. An example would be an educational campaign to discourage migrants from drinking irrigation water. Field sanitation projects funded through MESA are included in the latter group because they have mostly been educational in nature.

This casebook describes 27 examples of field projects conducted under MESA auspices, 12 in facilities development and 15 in program development. This is fewer than half of the total projects that MESA has conducted, but this number provides a good overview of the kinds of problems that have been encountered and the solutions that have been found. The list of projects, although selected, is representative of the whole; even some fairly unsuccessful projects have been included. The intent is not to glorify the MESA project but to provide some suggestions for migrant health centers.

The belief is that migrant health center personnel who read these cases will discover some valuable insights into the development process--problems likely to be found, obstacles to be encountered, pitfalls to be avoided, solutions that are workable. That is the objective of the casebook. Not all the projects can really be called successful; some accomplished only a part of what they started out to do. But even failures can be instructive.

The hope is that every migrant health center will find something among the cases, some tactic or technique, that it can adapt to its own circumstances. In this way, MESA experience can benefit the entire migrant network.

CHAPTER II

CASES IN FACILITIES DEVELOPMENT

Since MESA grants are small, they cannot pay the entire cost of major facilities construction projects. However, they are used either to form a part of larger funding packages or to lay the groundwork for such packages. Usually the larger funding involved is an FmHA grant and/or loan or a community development block grant (CDBG) from the U. S. Department of Housing and Urban Development (HUD).

These tend to be the most difficult projects to complete successfully because of uncertainty regarding what other agencies will do, especially in recent years when program funding for such agencies has been severely reduced. These problems appear in the cases discussed below: Belle Glade, Florida; Santa Maria/Cashion, Arizona; Bangor, Michigan; Gerber and Buttonwillow, California.

MESA grants are also used to pay for less costly facility items. Sometimes it is the migrant community that needs the facility--as in the cases of Midvale, Utah and Crystal City Texas--and sometimes it is the migrant health center itself--as in Castille, New York; Castaner, Puerto Rico; Lovington and Turnstall, Virginia; and Faison, North Carolina.

In one MESA project--Progreso, Texas--the MESA grant was used to establish a revolving loan fund to be used by low-income people in paying "hook-up" fees in order to become water system users.

A. Belle Glade, Florida: 1981-82

A Florida project in the early years of MESA suggests the problems of dealing with large funding agencies. In this case, MESA paid for a preliminary report to prepare the way for FmHA funding, but, after many promises and delays, the funding was not received, and improvements had to be made from other resources.

The project was in Palm Beach County and was conducted with the Belle Glade Housing Authority and the Palm Beach County Health Department (PBCHD). This department has operated a migrant health program for nearly 30 years and has a staff of engineers.

In 1981, they recognized a critical need for new or improved housing for low-income farmworkers. The Okeechobee Center in Belle Glade, which served as home to nearly 2,000 migrants, was in a severe state of disrepair. Built over 40 years before, its water and wastewater facilities were outmoded and in very poor condition. Repairs that had been made were performed in the absence of appropriate engineering studies. The complex experienced numerous leaks, breaks, and repair problems with both the water and sewage systems. These, in turn, caused a drop in water pressure that threatened the health and safety of the residents of the center.

Belle Glade did not have the financial means to undertake a rebuilding program at Okeechobee, but it did not want the situation to worsen. Federal financial assistance was sought from FmHA. The agency showed interest in the project but could not allocate funds for the engineering studies it required for repair and construction proposals like Okeechobee.

PBCHD engineers visited the migrant housing sites in Belle Glade, and it was jointly determined with NDWP that a full infiltration and inflow analysis by an engineering firm should be commissioned. The document would accompany a pre-application to FmHA for financing assistance. After a competitive bid process, the engineering firm of Hogan and Sawyer was chosen to carry out the work.

Unfortunately, the FmHA funding was never received. Using the information provided in the Hogan and Sawyer study, however, the Belle Glade Housing Authority itself was ultimately able to make many of the most-needed improvements on the Okeechobee complex. Thus the MESA grant did show results, although not the result originally intended.

B. Santa Maria and Cashion, Arizona: 1983

Spending up-front money in the hope of obtaining other funds is not necessarily a bad idea, as a MESA project in Arizona shows.

The communities of Santa Maria and Cashion are in an agricultural area of Maricopa County, Arizona. Both communities are low-income, and a substantial portion of their populations works as farm laborers.

As of 1982, Santa Maria, an unincorporated barrio of 400, had no central wastewater disposal system. The predominant use of failing seepage pits threatened resident well-being. The presence of surface effluent was a potentially serious public health hazard, especially to children. Apart from CDBG funding, the community had no other possible means of financing a remedy to this situation.

Cashion, an unincorporated farmworker community of approximately 2,000, was in a similar financial bind with regard to its water supply problem. In 1982, the area encountered 42 water line breaks. During this period, repair of the leaks alone amounted to \$11,572.37. Adding insult to injury, Cashion was assessed a 300 percent water rate hike by the city of Phoenix. The increase was necessitated by excessive water use caused by a dilapidated distribution system. Neither Cashion nor the city of Phoenix had the financial wherewithal to resolve this dilemma beyond patchwork maintenance.

Development projects in both communities were undertaken in 1983 by National Council of La Raza, a local development group, and Clinica Adelante, the migrant health center, with MESA funding. In both cases, the objective was to gather information to be used in an application for CDBG funds and to build public support for approval of the applications. Activities included holding public hearings, surveying community residents, providing a tour for the county sanitarian, preparing written proposals, attending CDBG review sessions, meeting with engineers--in short, the full complement of development tasks.

But the efforts of La Raza and Clinica Adelante paid off: Santa Maria and Cashion were awarded \$150,000 in CDBG funds. The money granted to Santa Maria was used for new septic tank installation. These sites had been identified by the wastewater disposal survey, funded by MESA to enable the community to document its need for help. The supporting documentation and the testimony provided by Clinica Adelante resulted in the CDBG application receiving a maximum score under the "eminent threat" category.

With La Raza's help, Cashion residents were able to obtain a moratorium on the water rate hike issued by the city of Phoenix. An exhaustive study of the community's water distribution system revealed that most of the transmission lines were 20 years old and of substandard material and size (2 and 3 inches instead of the standard 6 inches). Cost and work estimates on needed repairs resulted in a two-phased development plan that was implemented and completed with CDBG funding.

C. Bangor, Michigan: 1983

Agriculture is the economic mainstay of Keeler Township and the 40 miles surrounding this community in southwestern Michigan. Despite the use of mechanized farming practices, much of the area's crop production is labor intensive. Approximately 7,000 workers are needed to produce the truck vegetables grown here. Harvest employment for picking cucumbers and tomatoes peaks in August with 7,800 and in September with 6,000 workers. Orchard crops require substantial farmworker employment throughout the summer. In July, 3,600 laborers are needed for cherry picking, and peak employment for apple harvesting reaches 2,100 through October.

In 1983, Rural Initiatives for Shelter and Education (RISE), a non-profit housing subsidiary of the Migrant and Rural Community Health Association (MARCHA), initiated a farmworker housing project for those migrating to the Van Buren County area. The housing provided by local growers had become increasingly substandard. Due to economic conditions, farmers were unable to invest in new housing on any major scale, and, for the most part, existing camps were subject to "patch and fix" repairs. The situation was of great concern to growers as well as those in the non-agriculture sector. Both recognized that in the absence of decent housing, the area would lose its appeal for the best qualified and most stable workers, "the family farmworker unit."

Keeler was considered the most suitable building site for meeting the needs of future migrant occupants and FmHA financing requirements. However, the area had no central water or wastewater system. Consequently, the project would have to develop its own water source and means of wastewater disposal. The feasibility of this approach had to be presented to FmHA for approval before the agency would allocate funds. MARCHA did not have the needed monies for the engineering study, and MESA assistance was offered.

On August 22, 1983 the Keeler pre-application for funding was rejected by FmHA for a variety of reasons and stated concerns. By this time, RISE had solicited bids for the water and sewer study. These were sub-

mitted along with the request. A second pre-application, designed to address FmHA concerns about the first, was submitted approximately two months later. For the next year, Keeler project sponsors met with FmHA district and state staff to secure financing. In December, 1984, Keeler's pre-application was favorably reviewed. MESA was able to provide an extension on its grant obligation, and RISE was given assurance that engineers could begin work immediately and have it completed within a month of initiation.

MARCHA was finally able to use its MESA grant during the first quarter of 1985. It allowed RISE to complete Keeler's final application for FmHA financing, which was approved in the fall of 1985. The grant and loan package totaled \$504,000. Construction was completed in June of 1986, and the complex was open and fully occupied in August.

D. Castille, New York: 1983

The Community Medical Center is located in Castille in a rural area of upstate New York. It serves ten migrant camps where some 500 farmworkers reside. Shortly before the July 1983 opening of this facility, NDWP was contacted by Administrator Nancy Bracken about the Center's private well water supply. High levels of iron and manganese had been found. Without treatment, the extent of their presence threatened to damage the pipes and new medical equipment at the facility. Development program funding for the project had ended, and all original grant monies had been spent.

The Center sought a complete analysis of its water (approximately \$400). The County Health Department proved helpful in recommending a reliable firm to do the testing. Estimates were obtained for purchase and installation of a needed chlorination system that included a chemical feed pump, carbon filter, and a 120-gallon tank. A performance guarantee was secured by the Center from the equipment dealer. After the equipment was installed and operating, the water was re-tested to assure its improved quality and the proper functioning of the system employed.

With MESA advice and funding, this project was completed in four months. Needed chlorination and related equipment for the Community Medical Center was financed by MESA. The cost, \$2,300, included purchase and installation of the chemical feed pump, holding tank, carbon filter, and water softener, plus cleaning of the well pump equipment, water heater and all water lines in the building. Today the water at the Community Medical Center is safe for drinking and is of a quality that can be used in all medical equipment.

E. Midvale, Utah: 1984

Approximately 10,000 migrant and seasonal farmworkers are employed by Utah agriculture each year to produce row crops--such as onions, parsley, radishes and potatoes--and to work the orchards, which are primarily cherry and apple bearing. Despite a large annual influx of migrants, housing is limited and generally substandard.

In 1984, MESA agreed to help the Utah Rural Development Corporation of Midvale (URDC) make needed plumbing repairs at the Springlake Farmlabor Project. Through FmHA 514 funds, URDC had purchased and rehabilitated this 13-unit facility in central Utah in 1979. Since then, the project had been plagued by costly and continued wastewater system breakdowns. Communication about this situation led to an additional request for, and allocation of, MESA funding to enable URDC to collect "hard data" on water and sanitation related disease among farmworkers in this project area.

The facilities development component of this project involved consultation with the housing complex director, local plumbing contractors, and government officials, including state, county, city, and water district personnel. Plumbing services were obtained through a competitive bidding process, and project completion provided for tenants' orientation to assure proper use and maintenance of the improved wastewater system.

The sanitation study followed a five-step methodology: (1) search the chart review records of the Midvale Migrant Clinic to determine the names and worksites of patients who have presented positive symptoms of water or sanitation related disease; (2) complete a map plotting of all worksites and migrant housing units in the Salt Lake County area; (3) designate sites as "clean" or "suspect" on target map; (4) survey water and sanitation facilities at both suspect and clean sites and collect water samples for coliform testing to be performed by the Salt Lake City - County Health Department Division of Water Quality; (5) compare results of water analysis, the sanitation survey, and the presence of symptoms to determine if an association exists.

Inspection and repair services at Springlake were performed by a licensed plumbing contractor. Activities included the replacement of existing elbow and connecting lines to improve the flow of waste from the residential complex building.

The field sanitation survey (that included farmworker housing, where relevant) covered seven sites: Fas-sio Egg Farm, Okubo Farm, Gunco Nursery, Nakagawa Farm, State Farm, Hamilton Farm, and the Kawahara field and housing sites. It was anticipated that a pattern of clinic users' worksites might emerge indicating worksites at which water and sanitation facilities intervention, as well as education, might be specifically targeted. This development did not occur. All worksites in the Salt Lake County area were represented in the patient population.

Local farmworkers were found to have access to a purified drinking water source or purified "carried" water in the field, and most had access to toilet facilities in the field or at a nearby building. All were found to have access to purified hot and cold running water, shower/bath facilities, and toilet facilities in their homes. Even though shower/bath field facilities, were non-existent, URDC did not feel that this circumstance alone could account for the high incidence of water and sanitation-related symptoms of disease experienced by local migrant health clinic patients. Rather, the investigation revealed serious problems in personal hygiene and unsanitary living conditions among the local farmworker population, leading URDC to conclude that the improved health status of migrants could be realized through responsive educational outreach.

F. Crystal City, Texas: 1984

Over 75 percent of Crystal City's people work as migrant and seasonal farmworkers. Agriculture is the mainstay of the local economy; winter vegetables are produced and packed here for nationwide consumption.

The city's health and environmental laboratory was shut down in 1977 because of municipal budget problems. Local water samples had to be sent to San Antonio (100 miles away) for testing, and it took 4-6 weeks to obtain the results. As part of its on-going health promotion effort, Vida y Salud Health Systems, Inc. sought city cooperation and MESA funding to re-open the wastewater treatment plant lab. The clinic maintained that revitalizing this facility would increase the responsiveness of local government concern for water quality and help its practitioners reduce the number of gastrointestinal and related problems encountered through early detection of health-threatening water or sewer contaminants.

Vida y Salud developed a cooperative agreement with Crystal City whereby the health center financed (with MESA funds) the purchase of needed lab equipment and chemicals, which were, in turn, transferred to the city's wastewater project laboratory. Their safekeeping was guaranteed by the city. Vida y Salud secured a commitment from the local government to the laboratory work plan it proposed, which included state-required testing and private well water analysis for farmworkers recommended by the clinic on an as-needed basis.

The city already had a certified plant superintendent who was able to perform the necessary laboratory sampling and analysis of effluent required in its wastewater discharge permit. Project sponsors advertised for bids on the equipment and chemicals needed, and procurement followed.

Residents of Crystal City realized substantial savings in time, money and health with the re-opening of their wastewater laboratory. According to health clinic estimates, implementation of this grant promised to help as many as 8,000 migrant and seasonal farmworkers in Zavala County, Texas

G. Castaner, Puerto Rico: 1984

The Castaner General Hospital in Castaner, Puerto Rico, serves more than 14,000 agricultural workers. This mountain community had a history of inadequate water supply. Despite government efforts to upgrade the area's water system, the community continued to experience frequent loss of water service with great variance in water taste and quality. Castaner Hospital's reserve tank of approximately 1,000 gallons did not provide sufficient water for prolonged shut-downs. Also, it caused problems with respect to quality control of hospital water.

Using MESA funds, the Castaner Hospital sought improvements in its water supply in cooperation with the Water Authority of Puerto Rico. The Hospital accepted bids for upgrading its water system. Total es-

estimated cost of the project was \$6,700--\$6,000 for a fiberglass water tank with a 6,000-gallon capacity and \$700 for an automatic pump.

Castaner Hospital paid for acquisition of the pump, and installation was done by its personnel. The engineering costs of this project were donated by a local engineer.

The Castaner project was no sooner complete (8/29/84) when the area experienced a "dry-out." Given the hospital's newly improved water system, there was no disruption in servicing patients. This facility no longer operates under the threat of water loss. The holding tank assures the hospital of a water source during dry-outs and promises potable water in times of hurricane emergencies.

H. Lovington and Turnstall, Virginia: 1984

Prior to 1985, when the Blue Ridge Medical Center opened, migrant farmworkers in Nelson County, Virginia had to travel 35-45 miles to receive subsidized health care. There are three migrant camps in this area. According to local health officials, these house between 120-150 farmworkers, who come to harvest the peach and apple crops from July through November.

The Blue Ridge Medical Center project encountered a funding shortfall in its second fiscal year appropriation from HHS. To offset some of this loss, the BRMC building program sought MESA assistance in helping to finance work on the well and septic systems and the installation of a shower.

The Blue Ridge Medical Center outlined three specific activities in need of funding. First, a preliminary soil test, performed by a Virginia Tech soil survey team, indicated that the soil would percolate. Sandy loam was struck at a depth of 65-70 inches at the higher elevation of the property and red clay at 70 inches at the lower elevation. It was determined that the septic system would require approximately 1,200 square feet of drain field for an estimated cost of \$1,800.

Second, BRMC sought \$2,800 to cover the cost of drilling and installing private well water, plus \$500 for the water hook-up fee. Based on discussions with the county sanitarian and contractors, the project realized a considerable savings by arranging for a private, residential-use well instead of going with a public use well. Third, while most public health facilities do not include an on-site shower, the BRMC plan called for one. In so doing, the Center recognized that 25 percent of its county residents live without indoor plumbing for bathing. The architects's estimate for shower installation was \$600.

Funds, totaling \$5,700 to complete work on the Blue Ridge Medical Center were provided by MESA and Virginia Water Project (VWP), an NDWP affiliate. The center opened on July 15, 1985. In 1986, MESA and VWP again teamed up to finance a similar project in Turnstall Virginia.

I. Gerber, California: 1985

Gerber, in northern California, is composed of approximately 375 households, and farming is the primary source of income. For years, the community was plagued by a variety of drainage and wastewater problems. Results of a 1983 sanitation survey, conducted by the Tehama County Environmental Health Department in conjunction with the California Central Valley Regional Water Quality Control Board, confirmed that surface waters in the Gerber area were contaminated with sewage, resulting in a serious public health hazard.

The Community Housing Improvement Program (CHIP) was able to secure \$2,750 for technical assistance through the Rural Community Assistance Corporation (RCAC), an NDWP affiliate, to help the Gerber-Las Flores Community Service District investigate and apply to other funding sources. The most appropriate and viable source of federal fiscal aid appeared to rest with the CDBG program. Tehama County had agreed to solicit funds on behalf of Gerber in its FY85 CDBG proposal, but responsibility for preparation costs, which included a preliminary engineering report on the Gerber situation, was a local community concern. To insure continued progress on this critical project, MESA obligated \$7,000 in seed monies in 1984.

CHIP solicited bids from ten engineers within a 100 mile radius of Gerber. The engineering firm of Cook Associates was hired, based on its experience with similar projects and grasp of the situation in Gerber. A contract for \$3,750 was drawn up by CHIP and signed by Cook and the Gerber Community Services District. The agreement bought 200 hours of engineer's time, which was deemed sufficient. The \$3,250 balance of MESA funds was rebudgeted for remaining engineering work to be identified upon completion of the preliminary engineering report.

In June, a preliminary engineering report entitled, "Health Hazard Elimination and Rehabilitation of On-Site Tank/Leachfield Installations," was presented to the Gerber Community Services District. The study proposed five cost/benefit alternatives and a recommended course of action. That solution, which involved construction of a levee and rehabilitation of the community's 15 worst septic systems, received approval from all parties involved--CHIP, the CSD, the Tehama County planning director, and the director of environmental health.

CHIP was unable to use the balance of its MESA grant because of problems that arose with regard to the Gerber-CDBG funding request. That proposal was rejected, but this did not end CHIP's commitment to Gerber for water and sewer improvement. Building upon information gathered from the MESA project, CHIP was able to secure additional documentation on the Gerber situation from funds provided by the state of California. That pollution study was completed in November, 1986. It has been submitted to the Regional Water Quality Control Board with the hope that Gerber may be placed on EPA's priority list as a community qualified to receive grant funds.

J. Progreso, Texas: 1986

The goal of this project was to assure safe water services to farmworker families in the Progreso, Texas area through the establishment of a revolving loan fund. The fund was established with \$10,000 in MESA seed monies to help individual households meet the cost of water system hook-ups by Military Highway Water Supply Corporation (MHWSC), an NDWP affiliate.

Many families within the MHWSC impact area (The Rio Grande Valley) are low-income people who depend on farmwork for their livelihood. Access to existing water lines has been difficult for them, in part, because it involves an "up front" investment that many cannot afford to make. At present, a MHWSC connection fee is \$434. This cost is prohibitive for many farmworker households, forcing them to use water drawn from faulty, shallow wells or engage in the practice of hauling water from such unsanitary sources as irrigation canals.

Using MESA funds, the MHWSC established a revolving loan fund in a separate bank account. Also, a loan review committee was formed. Panel composition included two migrant health agency representatives--one from Su Clinica Familiar of Cameron County and one from the Hidalgo County Health Care Corporation--and three members of the MHWSC's board of directors. The loan review committee was to be responsible for determining the need and term of the loan to be made.

The project goal was to assist a minimum of 30 families during the first year of revolving loan fund operations. In so doing, MHWSC promulgated the following loan eligibility criteria: (1) the family must be owners of the property, not tenants; (2) the family must be below the present poverty guidelines; (3) the family must first exhaust all other social welfare agency assistance; (4) a home visit is conducted by MHWSC staff to determine the hardship; (5) a case history is written on each loan user; (6) a loan agreement is prepared by MHWSC's attorney for the terms of the loan; (7) the terms of the loan must be a minimum of \$50 and a maximum of \$395 at 6 percent interest, with interest and principal to be paid in equal monthly amounts; (8) the length of the loan must be for not less than 2 months nor more than 12 months.

The revolving loan fund is now operating and is being monitored closely with a view to possible replicability in other areas.

K. Faison, North Carolina: 1986

In 1986, for the first time, MESA attempted to encourage improved environmental conditions for migrant farmworkers by making small grant awards to help finance farmlabor housing repairs.

The service area of Goshen Medical Center reaches out to three counties in North Carolina where agriculture is an integral part of the economy. Each year, between 10,000-15,000 migrants are drawn to the area to harvest crops such as peaches, peppers, sweet potatoes, and tobacco.

There are approximately 60 migrant camps in Sampson County, a portion of which is serviced by Goshen. However, in Dublin County, abandoned farm houses are the primary source of shelter for migrants. Their living conditions are substandard and not subject to local health department inspection. Given this circumstance, Goshen proposed a financial incentive program to help local farmers make needed repairs in these kinds of migrant dwellings.

Public notice was made that limited funds, not to exceed \$600 per farmer, would be available to farmers on a first-come, first-served basis for repair of migrant dwellings. The center installed a separate bank account for MESA project funds. Their use was limited to the purchase of repair items that included screens and screen wire, roofing materials, water pump and pipe, interior paint, plumbing and sewage disposal materials, and pesticides for control of roaches, ants, mosquitoes, and rodents. Participating farmers were responsible for the cost of labor and for supplying proof of purchase to receive project reimbursement.

To demonstrate their interest in the project, farmers were required to submit a proposed repair plan (or list) along with the estimated cost of material purchases. Once implemented, these were subject to spot checks that assured dwelling repairs made in accordance with reported expenditures.

Farmers exhibited some initial hesitation about the Goshen project, fearing that participation might involve "strings attached" to the Occupational Safety and Health Administration. Once this notion was dispelled, Goshen enjoyed a positive and very cooperative response from growers.

The project funded 14 repair plans that involved replacement of windows, screens, doors, tubs, commodes and other bathroom fixtures as well as the purchase of garbage cans, pesticides, a hot water heater, paint and other work supplies such as those needed to pour concrete for outdoor washing facilities for heavy kitchen utensils. The estimated cost of some repair plans far exceeded limited project funding. Consequently, only certain tasks were completed. In other instances, the project had a snowball effect. Growers who could afford the cost of making additional improvements proceeded to do so, acknowledging that MESA funds allowed them to accomplish that much more in the way of migrant dwelling repair work.

L. Buttonwillow, California: 1987

Often a small grant of MESA funds allows a migrant community to access much larger amounts of federal facilities development monies. In a 1987 project, Buttonwillow Health Center, Inc. requested \$2,610 from MESA to pay the costs of annexing the low-income, migrant community of Westside to the Buttonwillow County Water District. Annexation was necessary for Westside to receive \$244,900 in CDBG funds for construction of a much-needed community water system.

Westside is located about one-half mile west of the town of Buttonwillow. A community survey taken in 1986 identified 66 percent of the residents as farmworkers or retired farmworkers, and 87 1/2 percent of its households have low or very-low incomes (below 80 percent and 50 percent respectively of the county median household income). Private wells and three small water systems supply water to the 90 residents. These systems have undersized, corroded and leaking dead-end water mains, limited storage, and sanding problems. During periods of high water use, many residents have little or no water pressure. The low pressure and numerous leaks allow bacteria to siphon from nearby cesspools and leachfields, contaminating the water supply. Other residents must haul water from Buttonwillow.

The lack of an adequate water supply adds to the housing crisis in the area. Several houses, including an 8-unit labor camp, have been closed for repairs. The vacancy rate for existing housing is less than one percent. A 1984 report by the Kern County Regional Housing Authority estimated that 9,401 additional migrant housing units will be needed in the San Joaquin Valley area by 1990. However, for Buttonwillow the report cautions that "any additional development [of housing units] will require the extension of public services."

The annexation of Westside was completed in the winter of 1987. Work is continuing on securing the CDBG funds for the water system.

CHAPTER III

CASES IN PROGRAM DEVELOPMENT

Program development projects do not necessarily result directly in improved facilities, but they contribute to this end in the long run. They involve mostly information-gathering and education activities that lay the groundwork for either the installation of better facilities or for the more efficient use of facilities. Unlike facilities development projects, program development efforts rarely leverage outside funds. However, they usually impact far more people.

Field sanitation improvement efforts fall into this category, although they may also include a limited amount of direct facilities work. MESA has supported the general push for better field sanitation by funding several demonstration projects--Murphysboro, Illinois; Salt Lake City, Utah; Denver, Colorado; Stockton, California.

In many cases, water testing is necessary to demonstrate a need for ameliorative action. MESA has funded a number of programs like this in recent years--Woodburn, Oregon; El Mirage, Arizona; Sparta, Michigan.

More and more, there has been a recognition of the need for educational materials regarding the dangers of contaminated water and the need for correct use of water. Accordingly, MESA has funded a variety of projects to produce written and graphic materials for use with migrant populations in the field--Greeley, Colorado; Pasco, Washington; Parlier, California; Raleigh, North Carolina; Fremont, Ohio; Martinsburg, West Virginia; Hammonton, New Jersey.

A. Murphysboro, Illinois: 1984, 1985

MESA has funded two projects in Southern Illinois to improve environmental health conditions affecting migrant farmworkers. These initiatives included educational outreach to growers and laborers, a migrant housing survey, and other activities to heighten public awareness about the relationship between sanitation and disease transmission and control.

Since 1973, Shawnee Health Services and Development Corporation has administered a seasonal comprehensive health program for migrant farmworkers. Between May and October, approximately 1,500 individuals come to Jackson and Union Counties to pick and pack the area's peach and apple crops. The Field Sanitation Act was enacted by the state of Illinois in August, 1983. While the statute required the provision of toilets and handwashing and drinking facilities, Shawnee realized that this mandate alone could not assure better health for migrant farmworkers.

Disease transmission related to local sanitation and waste disposal practices was an issue of mounting concern to the Shawnee migrant health program and its companion county health departments. Water hauling was a common means by which area consumption needs were met. In the absence of any regulations to guide this practice, water was transported by unlicensed parties or farmers who equipped their pick-up trucks with tanks. Often, containers that had housed chemicals or other contaminants were used inadvertently.

Shawnee anticipated that similar practices might be employed to provide drinking water within fields. Also, in the absence of waste hauler licensing, migrant health could be threatened by the 1983 Field Sanitation Act requirement to provide potable toilets. Using MESA funds, Shawnee proposed to assess and respond to the water sanitation practices of its service area within the context of a newly enacted state standard.

To secure information, advice and support for the project, Shawnee made contact with a host of agencies and organizations that included: the local health departments; the regional department of public health; the Illinois Migrant Council, Delta Region; the Illinois Migrant Council, Chicago; the U.S. Department of Labor (DOL); and the Illinois Primary Health Care Association.

During the 1984 project year, every grower in the two-county area was contacted. In early May, Shawnee and DOL co-sponsored a fruit growers meeting on field sanitation. Again in August, operators were notified by personal letter and news releases of the project's water analysis program. With MESA funds, testing was provided at no cost to growers in Jackson County and offered at a very nominal rate to those in Union County. As project subgrantees, the local health departments made contact with all of the farm operators as part

of their work on the migrant housing survey. Visits were scheduled with a dozen different orchardists, at which time information was shared about the Field Sanitation Act. Educational materials, developed by the project, were provided; water analysis was offered; and sample antiseptic towelettes were distributed.

By the end of August, Shawnee migrant health staff had interviewed 169 farmworkers at 16 separate orchards. Farmworkers exhibited considerable reluctance and/or fear of discussing any aspect of their living or working conditions, but the major concern to be expressed was availability of drinking water. In contrast to the opinion held by all growers who were interviewed, there was an affirmative farmworker response with regard to their intended use of port-a-potties as provided for under the new Field Sanitation Act.

The initial networking effort on project design resulted in some very positive developments: (1) the two local health departments (Jackson County and Southern Seven Health Departments) signed on as subgrantees; (2) the Illinois Migrant Council awarded \$3,185 to Shawnee for Project expansion; (3) the Illinois Primary Health Care Association agreed to develop resources for dissemination of information that included contact with the University of Illinois Cooperative Extension Service and the state medical society; (4) with DOL support, Shawnee was able to make a field sanitation project presentation at a meeting of local growers.

Project contact with area growers and workers confirmed the premise that neither group possessed an adequate working knowledge of the relationship between sanitation and disease control. Given the Illinois Migrant Council grant, Shawnee was able to rebudget MESA funds to produce a variety of much needed educational materials--a farmworker field sanitation brochure, handwashing signs, fact sheets on disease transmission, and handouts that provided local information regarding equipment distributors and available services for sanitary waste product disposal.

An equally important outcome of the project was local health department development of both a voluntary Water Haulers Certification Program and a Sewage Haulers Program. Contact with the sewage treatment plants in Carbondale and Murphysboro revealed that neither was able to accept the type of waste generated from port-a-potties or outhouses. The situation was resolved through arrangements made with the county landfill when it was found to have a permit to accept waste of this kind.

As part of the housing survey, local health department staff visited 11 residences, not subject to public health inspection. The major problem noted was a lack of suitable refuse disposal and maintenance of an acceptable level of cleanliness in almost all units. In response to survey findings, Shawnee staff filed two complaints with the state public health department. The problems, such as an overflowing pit privy, were resolved in a prompt manner.

The 1984 MESA Project drew its strength from cooperation--between Shawnee and both the local and regional health departments and by a new, positive working relationship that developed with local growers. This significant accomplishment reflects a deeper understanding of the environmental health care needs of migrant farmworkers.

Given the success of the first project, MESA welcomed the Shawnee request for additional funds in 1985 to assure project continuation and to strengthen the working relationships established between Shawnee and the local and regional health departments. Once again, the local health departments served as subgrantees responsible for educational outreach and field sanitation monitoring.

A licensed plumbing and sewage contractor was identified as a technical consultant for the project. Every area grower was notified about the demonstration component by direct mail, the same procedure that was successfully employed by Shawnee in the previous project year. Also, the health department sanitarians personally contacted all growers about the availability of funds for technical improvements relating to water and sewage disposal. In response to the 1984 farmworker and operator survey, Shawnee initiated the production of a portable slide tape program on field sanitation.

In 1985, the entire peach crop in southern Illinois was destroyed. As the second major crop failure in four years, it forced several growers out of business and occasioned a dramatic decline in farmworker migration to the area. Consequently, the pragmatic challenge of this MESA project was greater than usual.

Educational outreach began in September, as opposed to early summer, with the start of the apple season. Meanwhile, the operators' education brochure on field sanitation that Shawnee initiated with 1984 MESA funds was published by the Illinois Department of Public Health. It was distributed for use and review by

all agriculture and soil conservation offices, all cooperative extension offices in Illinois, and the Illinois Migrant Council.

By program year's end two technical assistance projects were completed. MESA funds were used to replace the chlorinator and pump of a contaminated cistern system, and a water tank was purchased for health department use to demonstrate safe water handling techniques. Also, MESA financed the purchase of soap dispensers for the Union-Jackson Farm Labor Camp.

B. Greeley, Colorado: 1984

The Sunrise Community Health Center in northern Colorado has approximately 8,000 encounters with migrant farmworker families each year. This figure reflects approximately 1,000 to 2,500 families that receive care, and it constitutes a very significant portion of the Center's low-income client base.

In 1982, the center interviewed 300 migrant farmworkers as part of a Migrant Health Initiative grant funded by HHS. The random sampling showed that 10 percent of the housing used by those surveyed had no indoor plumbing. Another 15 percent had cold water only in their homes. In most cases, these homes had piped-in water, but a few relied on the use of a garden hose. According to the study, families that lived under these conditions were more likely to need health care and also more likely to be of the lowest educational levels in the survey.

With MESA funding, the Sunrise Community Health Center completed an educational package that included a 12-page pamphlet, written in Spanish and English, and two bilingual posters. The project theme, "Keep Water Safe," was based upon conditions in northern Colorado under three behavioral situations: in the field, in the home supplied by well water, and in the home with only cold running water. Messages stressed the importance of using fresh water and the need for boiling it before use in such domestic tasks as dishwashing and baby formula preparation.

C. Pasco, Washington: 1984, 1986

The Benton-Franklin County service area of Salud La Clinica Migrant Health Center is located in the south-central part of Washington state. The two counties are separated by the Columbia River, which is the main source of irrigation water that, combined with climate, makes the area so conducive to agriculture. Major crops include asparagus, apples, cherries, grapes, pears, potatoes, onions, and carrots. Their annual production requires the employment of over 25,000 migrant and seasonal farmworkers. Approximately 85 percent of this workforce is Spanish-speaking, with little or no knowledge of English. For the most part, housing is provided by local growers and the Pasco Housing Authority. However, migrants in the Benton City area are known to utilize the river banks for refuge.

In 1984, La Clinica proposed an environmental health education project in response to the number of gastrointestinal complaints it received from farmworkers. Most of the reported problems were linked to patient use of contaminated irrigation water. The center wanted to protect, as well as treat, clients by equipping them with useful knowledge about safe drinking water. When HHS was unable to grant La Clinica the special funds needed for this outreach effort, MESA help was sought and given.

Project design began with basic research and information-gathering. A temporary, part-time education aide was hired to supplement the technical assistance provided by a clinic staff professional. Project staff identified and photographed many canal and unpotable water sites in the area. Water samples were collected from local irrigation faucets and canals. These activities were completed in preparation of a visual slide presentation to demonstrate the recognizable and deceptive aspects of unsafe drinking water. To assure project success, cooperation from farmers and/or fruit orchardists was actively pursued through personal contacts and on-site visits. Presentations scheduled involved the Benton/Franklin County extension agent and local school officials.

This MESA project established a working rapport with the county extension agent, local growers, and orchardists that far exceeded the expectations of La Clinica. Initial reluctance to having warning signs posted on their property was dispelled when growers were assured that the effort was a health education project, not a regulatory function.

Four sign prototypes (two in English and two in Spanish) of durable design were developed. Approximately one hundred of them were posted for permanent use at labor camps, orchards, and irrigation canal sites

throughout the area. Farmworker response to the signs and slide show was excellent. In addition to water samples and pictures collected, the presentation included specimens of intestinal parasites found in patients that had an actual history of drinking untreated water.

An important footnote to this project was the experience of one farmworker who, with increased awareness, found that the shower in his home was hooked up to irrigation water. He reported his concern about this situation to the farmowner who had the shower reconnected to a potable water source. As the La Clinica director wrote the year following project completion, "Little by little and step by step we do make a change."

Given the success of its 1984 MESA Project, La Clinica proposed a more far-reaching educational program on pesticides in 1986. Farmworkers were targeted for instruction, and the plan included a concurrent survey of area fields and orchards to determine the availability and use of toilet facilities and potable water. The clinic had established a working relationship with some of the area's farmowners, and it hoped to develop that rapport for the benefit of all.

Teaching materials, such as booklets written in English and Spanish and suitable films on pesticide safety, were assembled for class use. An environmental health aide was hired to work under the supervisory assistance of the clinic's health education coordinator, executive director and staff doctor. Farmworker health education classes were scheduled at local labor camps, day care centers, field and orchard sites and private homes within a 375-mile radius of the two counties. The plan included instruction on an individual encounter basis and training to area farmworker service providers. Grower participation was sought through a targeted mailing and by on-site visits. Survey information was gathered through the latter or coordinated with the class instruction schedule.

Twenty-eight classes were held, as opposed to the ten originally proposed, and well over 500 farmworkers received instruction. Almost 200 grower contacts were made, and over half of them participated in the survey. Close to 4,000 miles were travelled by project personnel in this outreach effort.

Some farmers were reluctant to participate in the project. This response, or lack thereof, was more prevalent during the asparagus season. The 1986 crop was not a prosperous one.

La Clinica found that a majority of its area farmers provide field toilets, but most farmworkers are responsible for their own drinking water. A majority of farmworkers were using irrigation water to rinse their hands before eating, and many related personal experiences with pesticide poisoning, only realizing what it was through project participation.

La Clinica prepared the text of six public service messages that were produced and aired by a public radio station associated with the Northwest Chicano Radio Network. Four of the segments ran four times a day, five days a week, for one month. The other two were aired four times every other day for a month.

D. Woodburn, Oregon: 1984

The Salud de la Familia (SDLF) Health Clinic in Woodburn, Oregon has been involved in the delivery of medical care to migrant and seasonal farmworkers for nearly 15 years. At the time of its request for MESA funds, the clinic reported over 75,000 encounters with agricultural laborers and their families.

In 1983, the Oregon Accident Prevention Division reported findings of secondary contamination in water wells. Washington County in the SDLF service area was identified as one of two troubled areas. The clinic proposed a well water quality testing program. It had state and local government support but no means of financing project activity. SDLF sought and received MESA funds to carry out the well water testing program as part of its on-going health prevention and disease prevention effort.

SDLF identified over 100 wells for testing through information gathered from the Woodburn Public Works Department, the Oregon Accident Prevention Division, and the drinking water program administered by Oregon's Health Division. The Clinic made arrangements to have the water analysis performed by Water, Food and Research Lab, Inc. Testing was directed by an EPA-certified microbiologist and designed to meet EPA standards. The lab agreed to provide a discount (sliding scale) based on the number of samples received. It also provided sterile containers plus instruction on how to ensure proper sample collection. Area farmers were contacted by SDLF through a letter of introduction about the project. This mailing explained that program participation involved no financial commitment. It was followed by on-site visits to collect water well samples.

According to area farmers, many of the wells identified by the Accident Prevention Division were no longer in use. Some had been closed for 15 years. Actual testing was limited to water drawn from 11 wells within a 15-mile radius of Woodburn. No significant presence of contamination was found. While project activity did not meet original expectations, some degree of farmworker safety was assured, and public fears about water contamination in this area were allayed.

E. Parlier, California: 1984

United Health Centers of the San Joaquin Valley, Inc. is located in Parlier in one of the richest agricultural areas of the world, known for its outstanding production of fruits, alfalfa, grain, and row crops. The downside of such acclaim is that the average application of pesticides in this part of California is the heaviest in the world. It reaches 50 million pounds per year.

While the state of California had set a DBCP exposure limit of 1.0 part per billion (ppb) in drinking water, some municipal water wells in Parlier tested as high as 26.0 ppb. In 1984, the city launched a \$1.5 million clean-up program. The project was designed to benefit those who lived within Parlier city limits, and it was expected to take a year to complete. United Health Centers sought MESA funds to develop a community education campaign to coincide with the city's decontamination effort. In so doing, it proposed a pilot project on DBCP treatment for farmworker households not served by the municipal water system but still likely to be using water drawn from contaminated wells in areas surrounding Parlier.

The pilot project design called for the installation and maintenance of water quality technology in two farmworker homes. UHC selected carbon-activated filters (Sears brand) as the most practical cost-effective means of assuring DBCP-free drinking water to program participants. With MESA funds, it planned to purchase, service, and monitor the water filtration equipment. Members of the demonstration households were expected to accept training in the operation (replacement) of filter elements. This prescribed water maintenance program would be featured in one of two video presentations developed by UHC as part of its DBCP community health education campaign.

The UHC outreach strategy included bilingual radio and TV public service announcements and bimonthly community presentations that utilized video programming and printed materials developed by the health center with MESA funds. The DBCP campaign was scheduled to operate on a daily basis in the waiting areas of the clinic and to be highlighted at UHC's 10th year anniversary health fair.

Over 1,000 people attended the UHC-sponsored health fair. The DBCP video-production was a featured attraction complemented by an informational flyer that every participant received. There was an overwhelming response to this presentation, and the clinic was deluged with phone inquiries and requests for more details about DBCP contamination following the anniversary exhibit.

Unfortunately, UHC was unable to complete the pilot project and companion video on carbon filter maintenance. Most of the area's farmworkers rented or used housing provided by their agricultural employers. When contacted, the owners of these residences refused to participate in the demonstration project.

F. Denver, Colorado: 1985

Agriculture constitutes the third most significant economic activity in Colorado where, each year, approximately 30,000 migrant and seasonal farmworkers are employed. This population is spread over 26 of the state's 63 counties engaged in the production of fruits and vegetables--lettuce, tomatoes, cucumbers, cabbage, beets, onions, cantaloupes, and watermelon.

In 1983, the Colorado Legislature urged growers to provide toilets and drinking water to their workers with the enactment of a resolution that carried no force of law. The Colorado Migrant Health Program in the Colorado Health Department saw little or no progress in the voluntary field sanitation improvement effort, but it lacked sufficient funds to document this inertia and the need for stronger legislative action. MESA agreed to finance the environmental assessment project, as proposed by the CHD-MHP, hoping that it would result in the development of a comprehensive program to address the water-related needs of Colorado farmworkers.

Two environmental assessment staffers, fluent in Spanish as well as English, were hired and given intensive survey training. Linkage with local migrant serving staff, i.e. health workers, was established, and issues such as referral and confidentiality agreements were negotiated. The survey was conducted during the

peak migrant impact season (June 24, 1985 - September 3, 1985) in the two most labor intensive agricultural areas of the State (North Central Colorado and Arkansas/San Luis Valley). The survey format was developed by the Migrant Health Program in conjunction with the Consumer Protection Division of the state health department. The field survey instrument designs were receptive data entry so that collected information could be placed on the state computer.

Project adjustments included a one-week delay in survey start-up because of the number of questions that arose concerning adequacy of water supplies, potential hazards not covered by data collection instruments, needs for regulatory intervention, etc. Also, time and travel requirements far exceeded original planning estimates. Even though housing assessments were coordinated with the field sanitation study, as a time-saving effort, sampling was based on accessibility and usually involved two or three visits to each dwelling.

The Colorado environmental assessment project covered 171 sites and 5,979 workers. It found only 16 percent of the surveyed fields had appropriate toilet facilities, while another 5 percent had toilets unsuitable for use. There was not a single instance in which drinking water was provided in an acceptable manner. No drinking water was available at 68 percent of the sites. Only two of the 171 fields had hand-washing facilities with sufficient quantities of water, soap, and adequate drainage away from crops. These findings resulted in the introduction of a 1986 environmental health initiative to assure safe working conditions for agricultural workers in the state of Colorado.

G. Raleigh, North Carolina: 1985

The goal of this MESA project was to enhance migrant health care in North Carolina by developing an environmental health education package for farmworker and service staff use that reflects the collective experience, expertise, and advice of health care professionals throughout the state. Statewide support for the project was initiated through the formation of a planning group composed of East Coast Farmworker Support Network (ECFSN) staff plus North Carolina's Migrant Health Program director and the director of the Tri-County Community Health Center in Newton Grove. Focusing on pesticide poisoning and parasitic infection, the group's aim was to avoid a duplication in effort and to design materials that promised easy, practical use.

ECFSN was able to match its MESA grant with funds received from the Z. Smith Reynolds Foundation for migrant farmworker health care advocacy. This allowed the project to hire staff and to propose a resource package that included patient/farmworker literature and training tapes complemented by a diagnostic materials for practitioner use.

Resource development was accomplished through help from a variety of sources--The University of North Carolina at Chapel Hill School of Public Health Epidemiology, the North Carolina Poison Center and Pediatrics Department at Duke University, the State Department of Human Resources, Farmworker Legal Services, and the State Agricultural Extension Service. Paid consultants were retained for video production and print design.

In early May, ECFSN and the Tri-County Community Health Center co-sponsored a pilot in-service training session. Environmental health experts from Duke and Chapel Hill medical and public health schools were recruited to speak to Tri-County personnel and other health providers from the State's two largest migrant impact counties (Sampson and Johnston) who were invited to participate. Program activities were videotaped to capture broadcast quality footage for use in producing the proposed videos. Informational materials already developed by the project, on pesticide poisonings and parasitic infections, were circulated for discussion and review.

The ECFSN MESA Project produced the following educational materials: (1) two 12-minute video presentations for migrant health providers covering the basic primary care intervention techniques for treating pesticide poisoning and parasitic infections; (2) two manuals for health practitioners, one covering basic information on pesticide poisoning and the other describing parasitic infections in migrant farmworkers; and (3) two health information brochures for migrant farmworkers, one discussing how to avoid pesticide contamination and the other dealing with preventive measures relating to parasitic infections.

H. El Mirage, Arizona: 1985

Clinica Adelante is the sole source of inexpensive health care to farmworker families in the agricultural area of northwestern Maricopa County. Since 1980, when the clinic opened, its staff has worked in close cooperation with other farm labor advocacy groups, such as the National Council of La Raza (NCLR), an NDWP affiliate, and the Arizona Farmworkers Union.

In 1984, Clinic Adelante, with coalition support, identified 25 labor camps in Maricopa County where groundwater contamination was strongly suspected. It proposed a testing program, financed by MESA, to determine the extent of this problem. In so doing, the clinic hoped to increase public awareness and government concern about field sanitation for farmworkers.

Development assistance was sought and received from a variety of sources. Education and training in groundwater testing and treatment technologies was provided by the California Institute for Rural Studies at Davis, California. The Arizona Farmworkers Union Committee on Pesticides agreed to collect the water samples. The Poison Center at St. Luke's Hospital in Phoenix, and Clinica Adelante board member Dr. Michael Gray, Director of Occupational Medicine at Kino Community Hospital in Tuscon, were committed to the project. Coordination and assistance from other groups, like the Arizona Municipal Water Users Association, was solicited. Extensive contact was made with state and local government personal, including those from the environmental studies office of the county health department and the field services section of the state health department.

Testing was barely underway when analysis showed an alarmingly high level of contamination among the samples collected. Results indicated that some of the water was not fit for bathing, much less drinking. This situation prompted the state government to enact legislation with stiff reporting requirements for pesticide contamination found in groundwater. Such matters must now be immediately referred to the Office of the State Attorney General for investigation and prosecution.

The groundwater testing program is an on-going effort in Arizona. Strategy includes monthly meetings between La Raza staff and government personnel. To date, the state has spent approximately \$20,000 on testing at farmworker sites identified by La Raza. Between 35-40 samples have been drawn from 25 locations, and some of these have proved to be the most polluted wells on record.

I. Sparta, Michigan: 1986

In 1985, over 3,600 migrant farmworkers were surveyed by the Sparta Health Center. Its western Michigan service area includes the counties of Kent and Ottawa where some 180 migrant labor camps are located.

From April through October, local fruit growers use 50-60 varieties of pesticides. The actual number of tons sprayed is unknown and, until MESA provided Sparta Health Center with funding, most wells serving many of the area's migrant housing camps had never been tested for pesticide pollution.

Meetings were held with local health department sanitarians, and an agreement was reached whereby water samples would be collected under their supervision. Three testing laboratories approved for EPA testing were contacted for price quotes for performing organic analysis. Muskegon Waste Water Management Laboratory was selected, based on economic factors and a history of having performed EPA grant work.

To enlist grower participation and support, the center sent letters to 105 farmers who operated migrant housing camps. The mailing advised them of the project and offered free water testing. Since this effort had been featured in a recent issue of the Great Lakes Fruit Growers News, a copy of this article was included as was a postage-paid response card. Twenty-three growers requested testing of their wells, three declined, and the remainder failed to return the cards.

Thirteen wells were chosen for testing from the 23 direct mail responses. Selection was based on proximity to the immediate service area and well-water depth. The latter was a crucial consideration. Given the cost of analysis and limited financing, the project aim was to perform testing only in wells considered to be high risk. The closer the well is to the surface, the more likely the well is to be contaminated from surface runoff or spillage. To identify these sites, topographical maps of the area were reviewed with a geologist. A sanitarian from the Michigan Department of Public Health, who inspected labor camps, was asked to recommend wells in his area for testing based on his experience and knowledge of the water table. From this list, wells were plotted on soil survey maps provided by the U.S. Department of Agriculture Soil Conservation

Service. A total of 23 wells were selected for testing based on grower interest, camp location, budgetary constraints, and the recommendations of the state public health sanitarian.

Sample collection was carried out under the supervision of a Michigan Department of Public Health sanitarian, and all samples were delivered to Sparta Health Center within 48 hours of collection. Samples were then transported to the testing laboratory within 24 hours of receipt. Four samples were collected from each water system; one sample was submitted for volatile organic compounds, one for pesticide and PCB analysis, and two for dispatch to the state health department for bacteria and partial chemical analyses. The cost of testing was \$230 per sample as opposed to a normal commercial price range of \$300-\$400 each.

The Sparta Health Center was encouraged by the results of its well-water testing program. The cost for conclusive analysis was prohibitive, but the project protocol could reliably suggest no significant presence of hazardous contamination in the wells tested. Samples were studied for bacteria, iron, sodium, nitrates, chloride, fluoride, hardness, and conductivity, plus testing for 56 chemical compounds. Gas chromatography and mass spectrometer methods were used to conduct analysis of the latter. These procedures were recommended by the laboratory chemist as being the most cost-effective means for measuring the greatest number of possible or likely contaminants.

Sparta issued a press release on the findings of its water quality project and prepared a farmworker newsletter, in both Spanish and English, that was distributed at local social service sites along with a copy of the pamphlet entitled, "Work Smart...Work Safely...With Farm Chemicals."

In completing this MESA project, Sparta strongly urged that future studies should be conducted at a level that would allow testing for all commonly-used pesticides based on geographic distribution. It maintained that all migrant labor camp wells should be tested at least once to establish a baseline against which to reference future water quality safeguard efforts.

J. Fremont, Ohio: 1986

Those involved with the Sandusky County groundwater assistance program in Ohio recognized the need for a separate, or special education, project to address the specific needs and concerns of migrants. An innovative, approach was sought to assure participation, and children were selected to be the program target, given their free tSd inclination toward learning new things. The Sandusky County Community Health Center, in cooperation with Great Lakes Rural Network, an NDWP affiliate in Fremont, developed a bilingual coloring book as part of their health education effort.

The coloring book was designed to inform and entertain children between the ages of pre-school through third grade. It features a cartoon figure of a water droplet, named Splash, to present the concepts of sanitation, health, and pollution. A teacher-parent guide is included, and the book is 16 pages in length. The coloring book was distributed for use and testing at the migrant health center and at four area schools participating in a summer migrant education program. In an effort to reach more of the migrant population, local service providers were contacted.

Over 7,000 coloring books were distributed. In addition to what had been proposed, 12 organizations participated in the delivery effort. Copies may be obtained for the cost of postage, while the supply lasts. Pre- and post-testing of children who were given the migrant environmental health coloring book showed significantly improved knowledge about water quality issues.

Impact analysis was accomplished by the use of two methods. A chi-square test was employed to gauge the association between coloring book use and number of correct exams, with age and sex variables accounted for and controlled. A Wilcoxon signed rank test was used to examine differences between the sexes in test score improvement. In this analysis, the effect of age was blocked out of the analysis because of the significant association found between age and test improvement. Children aged six and nine showed greater improvement than expected, whereas those seven and eight had actual values similar to those expected. There appeared to be no significant association between sex and age in regards to improvement on the exam following exposure to the coloring book.

K. Martinsburg, West Virginia: 1986

Shenandoah Community Health Center serves the tri-county area of Berkeley, Jefferson, and Morgan counties of the Eastern Panhandle of West Virginia. This area is known for its fruit production, which draws a substantial annual influx of migrant farmworkers, predominately male.

SCHC is the only health center in the state that provides care to agricultural migrants. Approximately 43 percent of these workers are Haitian, 21 percent are Hispanic, and 36 percent are of Jamaican, Bahamian or some other ethnic descent. Given this client mix, the center utilizes bilingual ombudsmen for its program who are fluent in Creole and Spanish. The center sought MESA support for its preventive health care effort, which concentrates on diseases magnified by the communal and transient lifestyle of its migrant patient clientele.

The goal of the project was to develop an environmental health film that incorporates the languages and cultures of the local farmworker community. A project planning group was established to assist in script development and film production. The program coordinator and staff were given direct responsibility for drafting, rewriting, and casting. The purchase of hardware for this project was completed by May 1986. Filming and recording equipment costs totaled \$2,500.

The scripting process sought input and data from auxiliary agencies such as the local health and sanitation departments, the U.S. Department of Labor, and Shepard College (for filming). Project staff met with local orchardists to enlist their cooperation for filming and presentation.

L. Salt Lake City, Utah: 1986

The Utah Occupational Safety and Health Administration (UOSA) was in the process of developing a state field sanitation standard when MESA agreed to finance a collaborative advocacy project in support of this effort. To encourage new standard compliance, the proposal called for liaison activities to facilitate dialogue between UOSH and Utah farmers in concurrence with the operation of a chemical toilet field demonstration. Also, project co-sponsors planned an environmental health education project to assess and address the informational health care needs of migrant women. The project co-sponsors were the Utah Rural Development Corporation and the University of Utah.

The project was able to carry out much of its liaison work through a series of presentations given at scheduled meetings of groups such as the Utah Farmers Union and the Fruit Growers Association. These appearances resulted in newspaper coverage and the preparation of a television piece on issues surrounding new standard compliance.

Site selection for the field demonstration of chemical toilets involved a number of considerations. First, there was geography. A project goal was to provide toilet facilities on at least one site in each of the three major harvesting areas in Utah. These locations also had to be within a reasonable travelling distance for staff to conduct on-site visits and facilities inspection.

Second, grower qualifications were a factor. Site selection required the presence of at least eleven field workers. To receive project reimbursement, participating farmers had to comply with the proposed Utah standard (which was the federal standard) in its entirety and be willing to provide input to its appropriateness. The project required farmers to make arrangements for the delivery and servicing of chemical toilets, including the responsibility for making initial payments. This protocol was designed to equip farmers and UOSH with insight on future field sanitation standard operation.

Finally, the initial project design for a "female education" program was to reach an optimal number of migrant women in Salt Lake and Utah counties. Due to logistical problems, this was later modified to a more concentrated effort, a "development" model wherein an in-depth assessment of attitudes among a small but representative group of female migrants was planned. Women were targeted in recognition of their significant impact on children and the household in general.

The field demonstration revealed a continued perception among growers that migrant farmworkers would abuse or not use toilet facilities when provided. The situation was exacerbated by a similar attitude demonstrated by equipment suppliers. There was a tendency to send the oldest or dirtiest units, and servicing was lax. The project also encountered several situational barriers in compliance. These included crew-size fluctuation and work site and work day variance, which also involved the practice of hiring out crews.

In specific regard to the latter, project staff found that farmers who used workers for a day here or there could not rationalize the expense of providing adequate field sanitation facilities, while the employing, or lending, farmers did not feel toilet transport or provision was their responsibility, especially from a financial point of view.

The outcome of the female education component was somewhat disappointing but most valuable to the future design of outreach activities. The project's attempt at "nonformal" education through utilization of natural group leaders worked against program goals. By working through a local farm owner's wife, project staff succeeded in making arrangements to have 20 women meet for on-site education.

Unfortunately, candid conversation never occurred because of participant fears that it would be misconstrued as disrespect, gossip, or complaining. A nonformal attempt at education was then made in the formal setting of a migrant Headstart "parent's day." The monthly meeting draws a good number of people in a formal but relaxed atmosphere. The women responded well, encouraging future program activities within this type of setting.

M. Stockton, California: 1986

Agricultural Workers' Health Centers, Inc. (AWHC), based in Stockton, is a community and migrant health center providing services in three counties of California at eight clinic sites, including seasonal labor camps. There are five AWHC clinics in San Joaquin County where, in 1983, the monthly average of farmworker patient encounters numbered 6,700 during the six-month growing season.

AWHC was organized 18 years ago. Since that time, it has continued to increase services and initiate programs to improve the well-being of migrant and seasonal farmworkers. In 1983, AWHC began the pesticides health management program, focusing on prevention as well as enforcement. Based on the results of a statewide needs assessment conducted in 1984, AWHC sought and received MESA funds to expand the scope of its pesticide program.

The activities proposed by AWHC were as follows: (1) create and distribute public service announcements (PSAs) for farmworkers on their rights to toilet and hand washing facilities and potable drinking water; (2) conduct a survey among clients to ascertain the level of compliance with field sanitation regulations; (3) design, present, and videotape a puppet show for farm-worker families about field sanitation; and (4) provide outreach to other migrant health centers in California on issues relating to field sanitation.

A small advisory committee from the San Joaquin Migrant Education Parent Advisory Board was organized to evaluate public service announcements and puppet show development. The project coordinator contacted the local bilingual broadcast stations to determine their preferred PSA format, to secure technical assistance and to discuss project media plans. Also, arrangements were made with five local migrant education councils to attend one of their monthly meetings during the summer to present the puppet shows, distribute educational materials and to answer questions. Tentative scheduling of the puppet show was planned for migrant education summer school classes with help from the local program health educator.

The field survey was designed to assess the availability of sanitation facilities and to determine farmworker awareness for their use and legal rights. As a pilot study, AWHC planned to distribute the questionnaire at two migrant farmworker housing centers near Stockton. It was subject to pre-testing, and the final draft was to be translated into Spanish.

AWHC developed two PSAs, one for radio and one for television, which identified hand-washing and clean drinking water as effective means to reduce the health hazards of pesticide exposure. The messages also stressed farmworker legal rights to field sanitation facilities.

The PSAs were very well received. An initial positive response from local media encouraged the project to seek statewide distribution. The TV spots were aired by five Spanish stations throughout California. Two other stations with broadcasting in English showed the PSAs locally. There was an equally enthusiastic response from radio media. Four Spanish and nine English stations aired scripts/tapes developed by the AWHC program. These materials were also made available to any California health center interested in using them in their local communities.

The field sanitation survey was distributed at three farm labor housing centers in San Joaquin County. Participation was voluntary and the response was lower than anticipated, primarily because the activity occurred

late in the season when many families had already left the area. As a pilot study, the survey indicated a need for further documentation in California, where the regulations exist, of field sanitation facilities. Initial results supported project suspicions that local compliance is haphazard. Another survey using the same questionnaire is planned, with door-to-door canvassing performed by student volunteers.

AWHC encountered some problems with script translation that delayed presentation of its puppet show. Nine puppets, portraying vegetable and fruit characters in addition to a farmworker hero, were created. Like the script, these were subject to advisory committee evaluation at each state of development. The services of a professional puppeteer were employed. Also, AWHC enlisted support from the Academy for Human Development, a community service agency offering a number of arts programs for youth. Despite production delays, AWHC hopes to maintain its show schedule for migrant education councils, at migrant housing centers, and for local farmworker community organizations. The puppets will also be used in the production of training videotapes, and they will appear at health staff seminars on pesticide exposure and treatment.

N. Hammonton, New Jersey: 1986

The target area of Sa-Lantic Health Services, Inc. covers six New Jersey counties, making it the major provider of health care services for migrant farmworkers in the state. In 1983, Sa-Lantic initiated a pesticide program, including a small scale survey that found a lack of adequate water facilities on local farms. The organization was unable to take action in this area because of lack of funds and technical expertise.

In 1986, Sa-Lantic sought MESA funding and obtained the assistance of an environmental science Ph.D. candidate from Rutgers University to perform further problem assessment and to help develop a responsive education approach to meet migrant farmworker needs regarding proper and necessary water use. Its proposed strategy also involved research of solutions to water resource problems that local farmers could implement without facing an overwhelming economic burden.

To secure local agency support for this MESA project, Sa-Lantic scheduled two briefings. These were attended by representatives from the Department of Labor, the Farmworkers Legal Services, and Department of Environmental Protection Bureau of Pesticide Control. A "council of advisors" was formed, and future meetings were planned as a result of this effort.

The strategy for problem assessment involved the development and use of a farmworker questionnaire, prepared in English and Spanish, followed by staff interviews with those farmworkers who had participated in the written survey and expressed a willingness to talk further about local field and housing water conditions. It was designed to provide the following information: worker's farm and homebase area; languages read, if any, and understood; availability and use patterns associated with laundering, campsite showering, handwashing and drinking water; distance from camps to fields and availability of transportation; field access to handwashing, drinking and emergency water; risk of exposure to pesticides, if any; general health problems and symptoms; years as a farmworker both in New Jersey and their homebase area.

Problem assessment was delayed, in part, by an unusually late strawberry harvest. Consequently, materials development did not get underway until mid-summer.

Initial problem assessment revealed the continuation of unnecessary pesticide exposure among farmworkers. The problem was compounded by insufficient and inappropriately designed showering facilities in the camps. Overall, field sanitation facilities were found to be inadequate.

Given farmworker concern about local water quality, Sa-Lantic obtained assistance from the state of New Jersey to test water drawn from selected service area farms. Even though the first eleven samples did not indicate any significant detectable pesticide levels, some concern was raised about the possibility of carbonate contamination.

O. Pullman, Michigan: 1987

Pullman Health Systems, Inc. is located in southwestern Michigan and serves an ethnically diverse population. Blacks, whites, and Hispanics reside in its service area, and there is a seasonal influx of approximately 2,000 migrants. The Hispanic population is increasing as greater numbers of migrants "settle out" and remain in the area after each growing season.

Pullman Health Systems serves as an advocate on migrant and residential environmental health concerns and supports community efforts to deal with water quality issues. Facility space is given to a local committee seeking to access health problems related to water quality. In 1987, with MESA support, the health system conducted a water quality assessment project of water from wells serving migrant and seasonal workers. The project was a cooperative effort that involved the Pullman Health Center staff, local migrant education agencies, Cooperative Extension Service staff, the Michigan Department of Public Health, area growers, and migrant and seasonal workers.

Fourteen wells were tested as part of the project, and three specimens were taken at each test site. The first specimen was analyzed for nitrate, iron, sodium, hardness, chloride, fluoride, and conductivity; the second was analyzed for bacteria and the third for PCBs, pesticides, and organic volatiles. Well sites were selected from areas of known contamination or at risk for contamination due to geologic, demographic and land use practices. The contaminants tested for were based on routine measures used to determine potable water and the most frequently used pesticides.

The Michigan Department of Public Health tested the specimens collected for partial chemistry and bacteria. A private laboratory tested the specimens for PCBs, pesticides, and organic volatiles. Both are EPA-approved labs.

The test results indicated a majority of the wells were contaminated with high levels of nitrates (50 percent). Chlorides, sodium, and bacteria contamination were also discovered. All well owners were sent their individual results and informed of appropriate action to be taken if needed.

CHAPTER IV

LESSONS FROM THE MESA PROJECT

When the case method is used as a guide to social action, there is a tendency to impose an artificial order in which the activities proceed neatly from problem to solution and produce a compact "lesson learned." The temptation to do this has been resisted in the cases discussed in the previous chapters because projects do not really operate that way in the field. Instead, they often proceed in fits and jerks, and the results are sometimes inconclusive. Accordingly, the cases have been presented "with the bark on," and readers can largely draw their own conclusions.

Although each individual project may not point a clear moral, the totality of cases is indeed instructive. It provides some useful lessons for migrant health centers that wish to become more active in the environmental field. It is not a blueprint exactly but rather a set of guidelines that have to be interpreted and applied creatively in particular circumstances. Here we will state the "lessons" as maxims to be observed; we leave it to the readers to adjust these maxims to their own realities.

A. Lesson One: Look Behind the Revolving Door

It is clear that many migrants suffer from lack of water and sanitation facilities and other environmental problems, both at home and at work. This fact is often hidden from migrant health centers. After all, everyone has water and sanitation facilities of some kind; life is impossible without them. But there are always differences of opinion regarding how adequate the facilities are.

Several factors tend to obscure the reality of migrant environmental conditions. First, individuals can adapt to the most adverse circumstances, and facilities are regarded as adequate simply because the people who use them see no alternative. Second, local health departments and other official agencies are likely to minimize existing problems if correcting them is their responsibility. Thirdly, there is often a lack of technical data that all can accept as a measure of inadequacy.

Thus migrant health centers that are serious about improving environmental conditions must do some digging to identify bad conditions. They must look beyond official statements of need and even the needs perceived by the target population. Sometimes the digging may involve some actual water testing at migrant housing and field sites. It may sound unbelievable that official agencies would allow contaminated water sources to exist, but it happens every day. In other words, health centers will sometimes have to develop their own data and their own measures of adequacy and act on this basis. Some of the MESA projects that are illustrative in this regard are Pasco, Washington; Woodburn, Oregon; Denver, Colorado, Raleigh, North Carolina; El Mirage, Arizona; and Sparta, Michigan.

Probably the best indicator of poor water and sanitation conditions is a repetition of water-related diseases such as diarrhea, particularly in children. If children with these chronic problems repeatedly appear in clinic waiting rooms, something is amiss, and clinicians should look for the causes. To do this, clinic personnel will have to be alert to the symptoms of water-related disease--they are not always obvious--and dedicated in tracking down the root causes.

In other words, if the clinic seems to have a "revolving door" for people with water-related diseases, then someone should look behind this door. For example, the Farmworker Justice Fund in Washington, D. C. reports (The Occupational Health of Migrant and Seasonal Farmworkers in the United States, 1986) that the incidence of parasitic infections among migrants is 30-60 percent. This is a huge revolving door because parasitic infections have serious implications for child growth and development, both mental and physical.

B. Lesson Two: Increase In-house Expertise

Lack of qualified staff is a chronic problem for migrant health centers. Never lavishly funded, the centers, in recent years, have had their budgets reduced to the bare-bones minimum. As a result, services beyond the basic primary health care are hard to provide.

The environmental area, in particular, is likely to go begging. Identification of water-related diseases is a clinical problem, but there may be no staff person to track and compile the necessary data. When it comes to engaging in ameliorative activity, i.e., developing projects to improve water and sanitation facilities, staff resources are likely to be totally absent. Even the people who are interested in environmental matters--some clinical people are not--probably lack the development expertise that is required.

Water and sanitation facilities projects may require health center personnel to interact with engineers, FmHA offices, and others who are not on the beaten path for primary care providers. Financial "bootstrapping" and packaging, familiar techniques to developers, represent unfamiliar territory for people accustomed to primary care practices. Some health centers do have trained in-house personnel, and others close the gap by working closely with outside development groups. But many health centers ignore the environmental side of health care, aside from calling poor conditions to the attention of the "responsible" authorities.

One way or another, health centers must increase their in-house environmental expertise, even at the expense of some reduction in direct patient encounters. It is not cost-effective to treat people over and over for the same same environmentally-induced illnesses; it is better to attack the problem at the source. Those who control the health centers' budgets must be educated to this philosophy.

Every migrant health center needs at least one staff person trained in environmental facilities development and actually working in this field. In addition, each health center needs to develop a comprehensive program for environmental improvement in its service area. This program should include a needs assessment and a phased set of activities for constructing facilities and training residents in their proper use. Budgetary amounts should be allocated to the various activities so that they can be completed when funds become available.

Funds are always a problem, of course. Ideally, HHS itself would augment health center budgets to provide for environmental programs, but there are sources of funds other than the parent funding agency of the health centers. If there is a clear plan laying out discrete, practical objectives, outside funding, say, from foundations, private nonprofit organizations, or state agencies is easier to obtain.

If the health center absolutely cannot create expertise on its staff, it should definitely make an alliance with some local development group. For example, many NDWP affiliates can assist health centers in development work. (A list of these affiliates is given in the Appendix.) But such organizations are usually spread thin as it is. "Letting-George-do-it" is an acceptable last resort, but it is far better to find some way to increase in-house expertise.

C. Lesson Three: Use Small Amounts of Money

Although a well-funded and comprehensive environmental improvement program is the goal, migrant health centers must learn to use small amounts of money as well. MESA experience indicates that if some creativity is applied, quite a lot can be accomplished for the expenditure of a few thousand dollars, and such amounts are infinitely easier to obtain than major funds for big programs.

Sometimes, the migrant clinic itself may need a better water or waste disposal facility--a new well, a rehabilitated sand filter, etc., and MESA projects have addressed this kind of need in several places--for example, Castille, New York; Castaner, Puerto Rico; and Lovington, Virginia.

More often, it is an educational activity that is appropriate because this type of project can produce concrete projects for very small outlays. MESA has contributed to the production of film strips, slide shows, coloring books, posters, and other types of educational materials. (See the cases of Raleigh, North Carolina; Greeley, Colorado; Fremont, Ohio; and Martinsburg, West Virginia, for example.)

The key, if a health center is to use a small amount of money effectively, is a grant that does not come with lots of strings. If a \$4,000 grant comes to a health center with a host of spending regulations, contracting restrictions, auditing requirements, and the like, then the grant is more trouble than it is worth. It may actually cost the health center money because they will have to expend more resources tracking the grant than the grant provides. MESA has avoided this problem by keeping paper requirements to an absolute minimum consistent with good business practice and financial accountability. Many health centers can and will use small amounts of money to accomplish environmental objectives--if they can do so without mortgaging their mainline programs.

D. Lesson Four: Leverage As Much As Possible

Since the amounts of money available to use on environmental projects is sure to be limited, it is incumbent on migrant health centers to use these funds to leverage as much additional money as possible. Leveraging is possible because public (and private) program funds uniformly are restricted to certain uses. If one amount of money (the smaller amount) devoted to a project can be used to cause a larger amount of money to be spent on the same project, this is called leveraging.

Thus FmHA has grant and loan funds for the construction of water and sewer facilities but they do not fund general need assessments. The lack of a needs assessment may hold up or prevent the obligation of FmHA funds. So if the health center can pay for the needs assessment, the entire project becomes possible.

Leveraging has become a key social program technique today. Since social program funds are very scarce, any program that can augment its resources with the funds of others is likely to be favored in the competition for public resources. In numerous MESA projects, small grants have been applied in this way. (See the cases of Bangor, Michigan, and Buttonwillow, California, for example.)

The problem with relying on leveraged funds is that a great deal of patience is required. Any organization relying on this technique loses control over its project timetable since the completion of the activity depends on the actions of others. As discussed earlier, for example, the MESA project kept funds committed to a housing project for three years waiting for FmHA to act on a loan application. In the end, however, the loan was obtained and the housing was built; the long wait was worthwhile.

Of course, not every leveraging attempt will be successful. Sometimes, money is spent on the front end of a project with high expectations but the "back-end" money is never received. There is no absolute way to prevent this from happening, although care should be exercised when deals are struck. Every organization wants others to put their money in first.

The possibilities and pitfalls involved in leveraging funds point up a major reason why migrant health centers need in-house expertise in the environmental area. Leveraging means negotiation, financial packaging, and sometimes unorthodox timetabling. This can only be done successfully by people who are familiar with the players and the game. Health centers without appropriate staff expertise should probably use their funds on discrete projects they can control. Health centers that have greater confidence in this area, however, should leverage as much as possible.

E. Lesson Five: Work With the Growers

Most of the struggles to improve environmental conditions for migrant farmworkers appear to pit health professionals against growers. The health professionals believe that those who own the land and grow the crops that migrants harvest do not always provide good housing for their workers, nor are they always careful to assure that work in the fields is done under healthy conditions. Housing may be a drafty labor camp with minimal water and sanitation facilities; pesticides may be carelessly used in the fields; the health of the migrants suffers.

Growers not surprisingly resent being characterized as the "bad guys" in the migrant health equation. They argue that the building of luxury facilities would make migrant labor an uneconomic proposition, put growers out of business, and, in the long run, lead to a loss of jobs for farmworkers. They also believe that farmworkers do not use properly and sometimes outright abuse whatever facilities are provided.

Migrant health centers should avoid becoming deeply involved in this controversy. There are already plenty of organizations representing both migrants and growers that fight the battle in the courts and in the legislatures. No doubt, health centers will tend to side with the migrants philosophically and emotionally, but they need not enter the fray as participants. They should not concern themselves with the question of who is at fault for poor environmental conditions and instead concentrate on improving those conditions by any means possible.

Migrant health centers should, wherever possible, work with growers to improve conditions. Many, perhaps most, growers would like to improve conditions if they can do so without going bankrupt. If health centers are willing to meet growers halfway, quite a lot can be accomplished. A number of MESA projects (for example, Murphysboro, Illinois, and Faison, North Carolina) have demonstrated that growers are willing to cooperate in improvement programs.

Obviously, if the health center can offer any financial inducements, even small ones, grower enthusiasm for improving environmental facilities is sure to increase. It will, no doubt, go against the grain of many health professionals to, in effect, provide subsidies to commercial operations. However, they should regard these subsidies as merely "sweeteners" in an overall program to benefit migrants.

The amounts of money involved are sure to be small--the health center will not have much--but they can make a difference. To the growers, the actual cash benefit is not likely to be as important as what the cash symbolizes--that someone actually cares about the growers' problems and is willing to help.

One of the first MESA activities in 1981 illustrates the principle that it pays to work with growers. A small farmer in North Carolina employed one migrant family at a certain time each year. The only available housing was a small cottage without water or indoor plumbing near the farmer's house, which had a well and septic tank. The farmer wanted to improve the migrant cottage and was willing to hook it to his water system, but his farm income was small and he felt he could not cover all the cost.

The MESA project agreed to pay to have a water line and appropriate plumbing installed if the farmer would, himself, build a sanitary privy for the cottage and replace all torn window screens. The deal was struck, the work was done, very little money was spent, and a migrant family--while hardly living in luxury--was living in sanitary conditions.

The "privy project" continues to serve as an inspiration to MESA, a simple case of what can be done to improve the migrant environment if all concerned cooperate.

APPENDICES

APPENDIX A
LIST OF NDWP AFFILIATES

Beaufort-Jasper Comprehensive Health Services, Inc.
P.O. Box 357
Ridgeland, SC 29936
(803) 726-8171 Contact Person: Thaddeous Z. Coleman

Colorado Rural Housing Development Corporation
4140 Tejon
Denver, CO 80211
(303) 455-7523 Contact Person: Alfred Gold

Community Resource Group, Inc.
2705 Chapman Road
Springdale, AK 72764
(501) 756-2900 Contact Person: John Squires

Community Water & Sewer Association
c/o Dixie Electric Cooperative
P.O. Box 30
Union Springs, AL 36089
(205) 738-2500 Contact Person: John Roberts

Development International
1111 N. 19th Street, Suite 400
Arlington, VA 22209
(703) 527-6966 Contact Person: Mary E. Morgan

Foundation for Rural Housing, Inc.
4506 Regent Street
Madison, WI 53705
(608) 238-3448 Contact Person: Charlotte Thompson

Great Lakes Rural Network
P.O. Box 568
109 South Front Street
Fremont, OH 43420
(419) 334-8911 Contact Person: Orville Burch

Green River Community College
Washington Environmental Training & Resource Center
12401 S.E. 320th Street
Auburn, WA 98002
(206) 833-9111 Contact Person: Fred Delvecchio

Guyandotte Water & Sewer Development Association
P.O. Box 1346
Logan, WV 25601
(304) 752-6873 Contact Person: Ervin Queen

Lee County Cooperative Clinic
500 West Atkins Boulevard
Marianna, AK 72360
(501) 295-5225 Contact Person: Harvey Williams

Maryland Rural Development Corporation
P.O. Box 6358
Annapolis, MD 21401-0358
(301) 269-0910 Contact Person: Don Curtis

Midwest Assistance Program, Inc.
318 E. Main, P.O. Box 81
New Prague, MN 56071
(612) 758-4334 Contact Person: Ken Bruzelius

Military Highway Water Supply Corporation
P.O. Box 250
Progreso, TX 78579
(512) 565-2491 Contact Person: Adan Cantu

Mississippi Institute for Small Towns
5305 Executive Place, Suite B
Jackson, MS 39206
(601) 981-9737 Contact Person: Harvey Johnson

National Council of La Raza
1112 E. Buckeye Road
Phoenix, AZ 85034
(602) 252-7101 Contact Person: Mark Van Brunt

Pennsylvania Intergovernmental Council
P.O. Box 1288
Harrisburg, PA 17108
(717) 783-3700 Contact Person: Charles Griffiths

Rural Community Assistance Corporation
2125 19th Street, Suite 203
Sacramento, CA 95818
(916) 447-2854 Contact Person: William French

Rural Housing Improvement, Inc.
P.O. Box 370
Winchendon, MA 01475
(617) 297-1376 Contact Person: Carl Allen

Self-Help Enterprises
P.O. Box 351
Visalia, CA 93279
(209) 733-9091 Contact Person: Greg Sparks

Southern Rural Health Care Consortium
P.O. Box 438
Red Bay, AL 35582
(205) 356-4421 Contact Person: Dorothy Harris

Virginia Water Project
P.O. Box 2868
Roanoke, VA 24001
(703) 345-6781 Contact Person: Wilma Warren

Water Resources Assistance Corporation
130 North Lake Drive
Prestonsburg, KY 41653
(606) 886-1071 Contact Person: Roger Recktenwald

APPENDIX B

MESA PROJECT PROFILES

Bangor, Michigan

Type of Project: Facilities Development
Project Year: 1983 Allocation: \$6,500
Participating Organization(s)/Contact Person(s):
Migrant and Rural Community Health Association (MARCHA)
P.O. Box 130 (April 1 - October 31)
Bangor, MI
(616) 621-3553

61146 Territorial Road (November 1 - March 31)
Decatur, MI 49045
(616) 621-3645
Contact Person: Connie Canfield

Belle Glade, Florida

Type of Project: Facilities Development
Project Year: 1982 Allocation: \$7,500
Participating Organization(s)/Contact Person(s):
Palm Beach County Health Department
West Palm Beach, FL
(305) 996-2140
Contact Person: David Motes, Executive Director

Belle Glade Housing Authority
Osceola Center - Administrative Office
117 Northwest Avenue
Belle Glade, FL 33430

Buena, Washington

Type of Project: Facilities Development
Project Year: 1983 Allocation: \$6,500
Participating Organization(s)/Contact Person(s):
Yakima Valley Conference of Governments
104 N. 1st Street, Room B-32
Yakima, WA 98901
(509) 575-4372
Contact Person: Robert Brandow, Director

Buttonwillow, California

Type of Project: Facilities Development
Project Year: 1987 Allocation: \$2,887.13
Participating Organization(s)/Contact Person(s):
Buttonwillow Health Center, Inc.
P.O. Box 917
277 E. Front Street
Buttonwillow, CA 93206
(805) 764-5211
Contact Person: Wagih H. Michael, Ph.D., Executive Director

Self-Help Enterprises
 200 Bridge Street
 P.O. Box 351
 Visalia, CA 93279
 (209) 733-9091
 Contact Person: Greg Sparks

Carrboro, North Carolina
Type of Project: Facilities Development
Project Year: 1982 Allocation: \$3,870
Participating Organization(s)/Contact Person(s):
 Orange-Chatham Comprehensive Health Services, Inc.
 400 Roberson Street
 Carrboro, NC 27510
 (919) 942-8741
 Contact Person: Moses Carey, Executive Director

Cashion/Santa Maria
Type of Project: Facilities Development
Project Year: 1983 Allocation: \$6,500
Participating Organization(s)/Contact Person(s):
 National Council of La Raza
 1112 E. Buckeye Road
 Phoenix, AZ 85034
 (602) 252-7101
 Contact Person: Mark Van Brunt

Clinica Adelante, Inc.
 12217 Grand Avenue
 P.O. Box 760
 El Mirage, AZ
 Contact Person: Laurie Martinelli

Castaner, Puerto Rico
Type of Project: Facilities Development
Project Year: 1984 Allocation: \$6,000
Participating Organization(s)/Contact Person(s):
 Castaner General Hospital
 Castaner, Puerto Rico 00631
 (809) 829-5010
 Contact Person: Roberto Ruiz Asence, Administrator

Castille, New York
Type of Project: Facilities Development
Project Year: 1984 Allocation: \$2,701
Participating Organization(s)/Contact Person(s):
 Community Medical Center
 P.O. Box 277
 Castille, NY 14427
 (716) 493-2587
 Contact Person: Dr. Douglas Mayle

Oak Orchard Community Health Center
 80 West Avenue
 Brockport, NY 14220
 (716) 637-5319
 Contact Person: Nancy J. Bracken

Chico, California

Type of Project: Facilities Development
Project Year: 1987 Allocation: \$7,000
Participating Organization(s)/Contact Person(s):
 Community Housing Improvement Program
 429 Normal Avenue
 Chico, California 95926
 (916) 891-6931
 Contact Person: Ann Harrington, Executive Director

Coachella, California

Type of Project: Facilities Development
Project Year: 1987 Allocation: \$7,120
Participating Organization(s)/Contact Person(s):
 Coachella Valley Housing Coalition
 P.O. Box 235
 1030 Sixth Street, #7
 Coachella, CA 92236
 (619) 398-0858
 Contact Person: John Mealy

Progreso Del Desierto, Inc.
 P.O. Box 245
 Coachella, CA 92236
 (619) 398-7277
 Contact Person: Sam Maestas

Crystal City, Texas

Type of Project: Facilities Development
Project Year: 1984 Allocation: \$5,961.60
Participating Organization(s)/Contact Person(s):
 Vida y Salud - Health Systems
 308 South 3rd Avenue
 Crystal City, TX 78839
 (512) 374-2301
 Contact Person: Ventura Gonzales, Jr., Director

Denver, Colorado

Type of Project: Program Development
Project Year: 1985 Allocation: \$7,000
Participating Organization(s)/Contact Person(s):
 Colorado Department of Health - Migrant Health Program
 4210 East 11th Avenue
 Denver, CO 80220
 (303) 320-8333
 Contact Person: Charles L. Stout, MPH

El Mirage, Arizona

Type of Project: Program Development (2)Project Years: 1985-1987 Allocation: \$12,000 totalParticipating Organization(s)/Contact Person(s):

Clinica Adelante, Inc.

12217 Grand Avenue

P.O. Box 760

El Mirage, AZ 85335

(602) 977-1219

Contact Person: Laurie Martinelli

National Council of La Raza

1112 E. Buckeye Road

Phoenix, AZ 85034

(602)252-7101

Contact Person: Mark Van Brunt

Faison, North Carolina

Type of Project: Facilities Development (2)Project Years: 1986-1987 Allocation: \$14,000 totalParticipating Organization(s)/Contact Person(s):

Goshen Medical Center

P.O. Box 187

Faison, NC 28341

(919) 267-0421

Contact Person: Elinor C. Ezzell

Fort Lupton, Colorado

Type of Project: Facilities DevelopmentProject Year: 1985 Allocation: \$10,000Participating Organization(s)/Contact Person(s):

Plan de la Salud

115 Second Street

Fort Lupton, CO 80621

(303) 892-0004

Contact Person: Stanley J. Brasher, Executive Director

Fremont, Ohio

Type of Project: Program Development (2)Project Years: 1986-1987 Allocation: \$13,000 totalParticipating Organization(s)/Contact Person(s):Great Lakes Rural Network - WSOS Community Action
Commission

P.O. Box 568

Fremont, OH 43420

(419) 334-8911

Contact Person: Orville Burch, Project Manager

Georgetown, Maryland

Type of Project: Facilities Development
Project Year: 1982 Allocation: \$12,500
Participating Organization(s)/Contact Person(s):
 Sussex Community Action Agency
 P.O. Box 431
 Georgetown, MD 19947
 (302) 856-7761
 Contact Person: Stan Bratton

Gerber, California

Type of Project: Facilities Development
Project Year: 1985 Allocation: \$7,000
Participating Organization(s)/Contact Person(s):
 Rural Community Assistance Corporation
 2125 19th Street, Suite 203
 Sacramento, CA 95818
 (916) 447-2854
 Contact Person: William French

Community Housing Improvement Program (CHIP)
 429 Normal Avenue
 Chico, CA 95926
 (916) 891-6931
 Contact Person: Cindy Triffo

Greeley, Colorado

Type of Project: Program Development
Project Year: 1984 Allocation: \$2,500
Participating Organization(s)/Contact Person(s):
 Sunrise Community Health Center
 P.O. Box 1870
 Greeley, CO 80632
 (303) 353-9403
 Contact Person: Alan Ackerman, Director of Research

Hammonton, New Jersey

Type of Project: Program Development
Project Year: 1986 Allocation: \$4,650
Participating Organization(s)/Contact Person(s):
 Sa-lantic Health Services, Inc.
 879 12th Street
 Hammonton, NJ 08037
 (609) 567-0200
 Contact Person: Freda M. Christie, Migrant Program Director

Hendersonville, North Carolina

Type of Project: Program Development
Project Year: 1987 Allocation: \$7,000
Participating Organization(s)/Contact Person(s):
 Migrant Family Health Service
 P.O. Box 5151
 Howard Gap Road & Highway #64 East
 Hendersonville, NC 28793
 (704) 692-4289
 Contact Person: Barbara Garrison, FNP

Lovingston, Virginia

Type of Project: Facilities Development
Project Year: 1984 Allocation: \$3,200
Participating Organization(s)/Contact Person(s):
 Virginia Water Project
 P.O. Box 2868
 Roanoke, VA
 (703) 345-6781
 Contact Person: Wilma Warren

Blue Ridge Medical Center
 P.O. Box 466
 Lovingston, VA 22949
 (804) 263-4752
 Contact Person: Sarah Jane Stewart, Administrator

Martinsburg, West Virginia

Type of Project: Program Development
Project Year: 1986 Allocation: \$5,000
Participating Organization(s)/Contact Person(s):
 Shenandoah Community Health Center (SHCH)
 Box 3236
 Martinsburg, WV 25401
 (304) 263-4956
 Contact Person: Mr. R.D. Winston, Director of Migrant Affairs

Mascotte, Florida

Type of Project: Facilities Development
Project Year: 1982 Allocation: \$5,000
Participating Organization(s)/Contact Person(s):
 Lake Community Development, Inc.
 P.O. Box 884
 Tavares, FL 32778
 (904) 343-0171
 Contact Person: Jack Marotta, Administrator

Midvale, Utah

Type of Project: Facilities Development
Project Year: 1984 Allocation: \$6,000
Participating Organization(s)/Contact Person(s):
 Utah Rural Development Corporation
 12 East Center Street
 Midvale, UT 84047
 (801) 566-1638
 Contact Person: Donna Olson, Health Director

Murphysboro, Illinois

Type of Project: Program Development (2)
Project Year: 1984 & 1985 Allocation: \$12,000 Total
Participating Organization(s)/Contact Person(s):
 Shawnee Health Services & Development Corporation
 South Hospital Drive
 P.O. Box AG
 Murphysboro, IL 62966
 (618) 684-5844
 Contact Person: Toby J. Saken, Associate Director

Parlier, California

Type of Project: Program DevelopmentProject Year: 1984 Allocation: \$7,000Participating Organization(s)/Contact Person(s):

United Health Centers of San Joaquin Valley, Inc.

P.O. Box 190

Parlier, CA 93648

(209) 646-3561

Contact Person: Richard Figueroa

Self-Help Enterprises

200 Bridge Street

P.O. 351

Visalia, CA 93279

(209) 733-9091

Contact Person: Greg Sparks

Pasco, Washington

Type of Project: Program Development (2)Project Year: 1984 & 1986 Allocation: \$9,500 TotalParticipating Organization(s)/Contact Person(s):

Salud La Clinica Migrant Health Center

P.O. Box 1323

515 W. Court Street

Pasco, WA 99301

(509) 547-2204

Contact Person: Guillermo V. Casteneda, Executive
Director

Payette, Idaho

Type of Project: Facilities DevelopmentProject Year: 1987 Allocation: \$7,000Participating Organization(s)/Contact Person(s):

Payette Health Care

1441 N.E. 10th Avenue

Payette, ID 83661

(208) 642-9376

Contact Person: Rosalyn Case, Executive Director

Progreso, Texas

Type of Project: Facilities DevelopmentProject Year: 1986 Allocation: \$10,000Participating Organization(s)/Contact Person(s):

Military Highway Water Supply/Corporation/

The Hildalgo County

Health Care Corporation/Su Clinica Familiar

P.O. Box 250

Highway 281, Relampago

Progreso, TX 78579

(512) 565-2491

Contact Person: Adan Cantu, Manager, MHWSC

Pullman, Michigan

Type of Project: Program DevelopmentProject Year: 1987 Allocation: \$7,000Participating Organization(s)/Contact Person(s):

Pullman Health Systems

5498 109th Avenue

Pullman, MI 49450

(616) 236-5021

Contact Person: Linda Budnick, R.N.

Raleigh, North Carolina

Type of Project: Program DevelopmentProject Year: 1985 Allocation: \$6,000Participating Organization(s)/Contact Person(s):

East Coast Farmworker Support Network

P.O. Box 1633

Raleigh, NC 27602

(919) 682-3818

Contact Person: Chip Hughes

Rochester, New York

Type of Project: Program DevelopmentProject Year: 1987 Allocation: \$2,000Participating Organization(s)/Contact Person(s):

Rural Opportunities, Inc.

339 East Avenue, Suite 305

Rochester, NY 14604

(716) 546-7180

Contact Person: Stuart Mitchell, Executive Director

Salt Lake City, Utah

Type of Project: Program DevelopmentProject Year: 1986 Allocation: \$6,965Participating Organization(s)/Contact Person(s):

University of Utah Medical Center - Department of

Family Health and Community Medicine

50 North Medical Drive

Salt Lake City, UT 84132

(801) 581-8284

Contact Person: Louise Weidner, Ph.D.

Somerton, Arizona

Type of Project: Facilities DevelopmentProject Year: 1984 Allocation: \$5,000Participating Organization(s)/Contact Person(s):

National Council of La Raza

1112 E. Buckeye Road

Phoenix, AZ 85034

(602) 252-7101

Contact Person: Mark Van Brunt

Sparta, Michigan

Type of Project: Program DevelopmentProject Year: 1986 Allocation: \$8,000Participating Organization(s)/Contact Person(s):

Sparta Health Center
 475 South State Street
 Sparta, MI 49345
 (616) 887-8831
 Contact Person: Drew Robinson

Stockton, California

Type of Project: Program Development (2)Project Years: 1986-1987 Allocation: \$16,150 totalParticipating Organization(s)/Contact Person(s):

Agricultural Workers' Health Centers, Inc.
 230 N. California Street
 P.O. Box 779
 Stockton, CA 95201
 (209) 948-5410
 Contact Person: Michael H. Kirkpatrick, Administrator

Turnstall, Virginia

Type of Project: Facilities DevelopmentProject Year: 1986 Allocation: \$3,000Participating Organization(s)/Contact Person(s):

Virginia Water Project/Sandy River Medical Center
 702 Shenandoah Avenue, N.W.
 P.O. Box 2868
 Roanoke, VA 24001
 (703) 345-6781
 Contact Person: Elaine Stinson

Victoria, Virginia

Type of Project: Program DevelopmentProject Year: 1987 Allocation: \$5,000Participating Organization(s)/Contact Person(s):

Lunenburg Medical Center
 P.O. Box 70
 Victoria, VA 23974
 (804) 696-2165
 Contact Person: John O'Brien, Administrator

Woodburn, Oregon

Type of Project: Program DevelopmentProject Year: 1984 Allocation: \$3,560Participating Organization(s)/Contact Person(s):

Salud de la Familia, Inc. Health Clinic
 347 North Front Drive
 Woodburn, OR 97071
 (503) 982-2000
 Contact Person: Luz Bazan Gutierrez, Executive Director

APPENDIX C

CHRONOLOGICAL LISTING OF MESA PROJECTS

1982 Program Year

Carrboro, North Carolina
Mascotte, Florida
Georgetown, Maryland
Belle Glade, Florida

1983 Program Year

Bangor, Michigan
Cashion/Santa Maria, Arizona
Buena, Washington
Castille, New York

1984 Program Year

Murphysboro, Illinois (1)
Woodburn, Oregon
Pasco, Washington (1)
Greeley, Colorado
Crystal City, Texas
Midvale, Utah
Castaner, Puerto Rico
Parlier, California
Somerton, Arizona
Lovingson, Virginia

1985 Program Year

Murphysboro, Illinois (2)
Raleigh, North Carolina
Gerber, California
Denver, Colorado
Fort Lupton, Colorado
El Mirage, Arizona (1)

1986 Program Year

Salt Lake City, Utah
Sparta, Michigan
Stockton, California (1)
Fremont, Ohio (1)
Progreso, Texas
Faison, North Carolina (1)
Hammonton, New Jersey
Pasco, Washington (2)
Martinsburg, West Virginia
Turnstall, Virginia

1987 Program Year

El Mirage, Arizona (2)

Victoria, Virginia

Stockton, California (2)

Chico, California

Fremont, Ohio (2)

Buttonwillow, California

Coachella, California

Faison, North Carolina (2)

Hendersonville, North Carolina

Pullman, Michigan

Payette, Idaho

Rochester, New York

NDWP 

NATIONAL WATER PROJECT 1988