

PN-ABP-095
82391

**AGENCY FOR INTERNATIONAL DEVELOPMENT
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ENTER INFORMATION ONLY IF NOT INCLUDED ON COVER OR TITLE PAGE OF DOCUMENT

1. Project/Subproject Number 9365948	2. Contract/Grant Number DPE-5948-Q-00-9031-00	3. Publication Date May 1993
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4. Document Title/Translated Title

Credit Schemes for Home Improvements and Sustainability Mechanisms
for the Chagas Disease Control Project - Bolivia -
USAID/Bolivia Community and Child Health Program

5. Author(s)

1. Calkins, Abigail
2. Coughlin, Jason
- 3.

6. Contributing Organization(s)

Cooperative Housing Foundation under subcontract to the
Vector Biology and Control Project
Medical Service Corporation International

7. Pagination 33	8. Report Number 82235	9. Sponsoring A.I.D. Office R&D/H
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10. Abstract (optional - 250 word limit)

11. Subject Keywords (optional)

1.	4.
2.	5.
3.	6.

12. Supplementary Notes

13. Submitting Official Robert W. Lennox, Sc.D.	14. Telephone Number 703-527-6500	15. Today's Date May 7, 1993
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16. DOCID	17. Document Disposition DOCRD [] INV [] DUPLICATE []
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VBC PROJECT

Tropical Disease Control for Development

Credit Schemes for Home Improvements and Sustainability Mechanisms

**for the Chagas Disease Control Project
– Bolivia –**

USAID/Bolivia Community and Child Health Program

by

**Abigail Calkins
Jason Coughlin**

**Cooperative Housing Foundation
under subcontract to the VBC Project**

VBC Report No. 82235



Cooperative Housing Foundation

April 2, 1993

Robert W. Lennox, Sc.D
Senior Vice President
Medical Service Corporation International
1716 Wilson Boulevard
Arlington, VA 22209

Tel: (703) 276-3000
Fax: (703) 276-3017

Re: Cooperative Housing Foundation (CHF) Report on Credit Schemes for Home Improvements and Sustainability Mechanisms for the Chagas' Disease Control Project - Bolivia

Dear Dr. Lennox:

I am pleased to submit to you the Cooperative Housing Foundation's (CHF) Report on "Credit Schemes for Home Improvements and Sustainability Mechanisms for the Chagas' Disease Control Project - Bolivia," based on CHF's technical assistance provided to USAID/Community and Child Health (CCH) program in Bolivia in March 1993.

As you will see in the report, the Chagas' Disease Control Project in Bolivia has a number of options available to it in improving the sustainability of the project. In particular, a credit program will provide beneficiaries with needed assistance to improve their homes in the fight against Chagas', but in a manner that is self-sustaining. A credit program will also increase the stake that beneficiaries have in the outcome of the project, enhancing the overall effectiveness of Chagas' prevention. We recommend that the Chagas' Disease Control Project use this report as the basis for designing and implementing a Pilot Credit Project that will test the viability of a credit program. We at CHF hope that we can be of further assistance in the design and monitoring of such a pilot project.

I believe that this has been an extremely productive collaboration and I look forward to working with CCH, MSCI, VBC, and the Chagas' Disease Control Project in the near future. Should you have any questions, please do not hesitate to contact me, or Abigail Calkins, Assistant Program Officer.

Sincerely yours,

A handwritten signature in dark ink, appearing to read 'Judith A. Hermanson', is written over the typed name.

Judith A. Hermanson
Executive Vice President for International Programs

JAH/acc

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**CREDIT SCHEMES FOR HOME IMPROVEMENTS AND
SUSTAINABILITY MECHANISMS
FOR THE CHAGAS' DISEASE CONTROL PROJECT
- BOLIVIA -**

Prepared by:

The Cooperative Housing Foundation

**Abigail Calkins
Jason Coughlin**

March 1993



Cooperative Housing Foundation

Mail: P.O. Box 91280, Washington, D.C. 20090-1280 ■ Office: 1010 Wayne Ave., Suite 240, Silver Spring, MD 20910 ■ (301) 587-4700 ■ FAX (301) 587-2626 ■ Telex 440271 CHFU

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Acknowledgements

Preparation of this document was sponsored by the VBC Project under contract number DPE-5984-Q-00-9031-00 to Medical Service Corporation International, Arlington, Virginia, USA, for the Agency for International Development, Office of Health, Bureau for Research and Development.

On behalf of the Cooperative Housing Foundation, the authors would like to thank the staff of the CCH Chagas' Disease Control Project. Our deepest gratitude is reserved for Dr. Fanor Balderrama, CCH Coordinator/Cochabamba, who provided us with his expertise, time and personnel to facilitate our investigation in Cochabamba. We would also like to give special thanks to Dr. Andrew Arata, Dr. Joel Kuritsky, VBC, MSCI and USAID for making this study possible.

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Resumen Ejecutivo

El Proyecto de Salud Infantil Comunitaria (CCH) de la A.I.D./Bolivia--Proyecto de Control de la Enfermedad de Chagas--en el presente está patrocinando un proyecto piloto destinado al combate de la enfermedad de Chagas en Bolivia. Este programa, el cual se inició en 1991 y que se llevará a cabo por cuatro años, está diseñado para examinar las diferentes alternativas de prevención de Chagas que se presentarán al Gobierno de Bolivia (GOB). El GOB utilizará las lecciones aprendidas durante el proyecto piloto de la CCH para ejecutar un programa a nivel nacional de largo plazo de control de la enfermedad de Chagas. Las medidas examinadas en el proyecto piloto incluyen:

- 1) El mejoramiento de la vivienda, incluyendo mejoramientos al domicilio y área circundante;
- 2) La educación de la comunidad;
- 3) El rociamiento de domicilios y área circundante (corrales);
- 4) La investigación y análisis de la transmisión congénita o transfusible.

Preparado por la Fundación para la Vivienda Cooperativa (CHF), patrocinado por el Proyecto "Vector Biology Control" (VBC) de la Agencia Internacional de Desarrollo/Washington, y dirigido por la Corporación Internacional de Servicios Médicos (MSCI), este informe se concentra en mecanismos para mejorar la sustentabilidad del existente Proyecto de Control de la Enfermedad de Chagas. Específicamente, este informe se concentra en la factibilidad de incorporar un programa de recuperación de costos, incluyendo el establecimiento de un programa de crédito como parte del componente de mejoramiento de la vivienda del Proyecto de Control de Chagas en Cochabamba.

Existen, por lo menos, tres maneras que no se excluyen, por medio de las cuales el Proyecto de Control de la Enfermedad de Chagas puede mejorar su sustentabilidad:

- 1) Haciendo que los recursos duren más a través de mecanismos de costos económicos;
- 2) Haciendo más eficientes los recursos que se usan actualmente a través de mecanismos que realzan su eficacia;
- 3) Reusando los recursos de otros beneficiarios a través de mecanismos de recuperación de costos.

En el primer escenario, el Proyecto de Control de la Enfermedad de Chagas reduciría costos, tales como el subsidio básico proveído a cada familia, para así ofrecer asistencia a más beneficiarios por un período de tiempo más largo. En el segundo escenario, el proyecto invertiría más dinero para promover la prevención de Chagas y animar a los beneficiarios a que mantengan los mejoramientos

de sus hogares, lo cual es en sí una inversión adelantada con beneficios de largo plazo. En el tercer escenario, el proyecto recobraría los costos a través de un programa de créditos. Este informe recomienda una combinación de éstos tres. Mecanismos específicos para la sustentabilidad incluyen:

Mecanismos de Ahorros de Costos

- 1) Reduciendo el subsidio básico que se le ofrece a cada familia;
- 2) Continuando el fomento de la utilización de materiales locales para el mejoramiento de la vivienda;
- 3) Estableciendo industrias caseras (familiares) donde sea factible;

Mecanismos para Aumentar la Eficacia

- 4) Montando una campaña de publicidad del Chagas para incrementar conciencia/interés público en el mantenimiento y la prevención de esta enfermedad;
- 5) Elaborando materiales educacionales que ayuden a los promotores a divulgar el mensaje en una manera consistente.

Mecanismos de Recuperación de Costos

- 1) Requiriendo a los beneficiarios que le paguen al proyecto por los materiales;
- 2) Estableciendo un programa de créditos.

Algunos de los mecanismos de ahorros de costos, tales como la reducción del subsidio básico de cada beneficiario, tendrá un impacto directo en el peso que el beneficiario cargará para completar los mejoramientos de vivienda. Una de las razones principales de establecer un sistema de crédito es que dicho sistema le permitiría al proyecto reducir el subsidio básico proveído a cada beneficiario, y, al mismo tiempo, le permitiría mantener su eficacia. Si se diseña correctamente, un programa de crédito también serviría de instrumento útil para el desarrollo sustentable por las siguientes razones:

Un programa de crédito:

- 1) Sirve como mecanismo de recuperación de costos, prolongando la duración del proyecto y expandiendo el número de beneficiarios que reciben asistencia;
- 2) Aumenta el interés personal de los beneficiarios en el proyecto, pues ellos están pagando por más de los mejoramientos de sus viviendas; por lo tanto aumentan su vigilancia y mantenimiento de dichos mejoramientos;
- 3) Asiste a los beneficiarios con préstamos modestos que les permitirán completar más rápidamente los mejoramientos de sus viviendas;

- 4) Atrae a donantes que desean recuperación del costo y el crédito incluidos en los proyectos de desarrollo;
- 5) Enseña a las personas cómo usar el crédito para que así puedan participar en otros programas de crédito.

Sin embargo, para que un programa de crédito sea eficiente, este debe estructurarse apropiadamente, con la cantidad de tiempo y análisis adecuado. Bolivia no es una excepción. El boliviano pobre ha tenido experiencias desafortunadas con el crédito en el pasado, muchas veces siendo la víctima de programas de crédito. A muchos de los pobres se les ofreció préstamos cuyos intereses sobre el pago eran inclusive más altos que sus ingresos brutos anuales, o se les ofreció préstamos basados en las perspectivas más altas de producción de una cosecha. Las sequías redujeron en gran parte sus ingresos, haciendo imposible que el beneficiario cancelara sus pagos. Bajo estas circunstancias, la gente perdió sus garantías--sus hogares, sus cosechas--muchas veces a causa de esta estructura imprudente de los préstamos. El boliviano pobre con buena razón empezó a desconfiar del crédito. Experiencias pasadas de ésta índole necesitan ser contrarrestadas con una estructura de préstamos apropiada, complementada con un programa educacional completo que les enseñe: al personal cómo presentar un programa de crédito; a las comunidades prestatarias cómo manipular el crédito; y a la institución financiera cómo atender el servicio de préstamos para el mejoramiento de la vivienda.

Este informe sugiere varios elementos que el Proyecto de Control de la Enfermedad de Chagas, como proyecto piloto, debe analizar a fin de ejecutar un programa de créditos. Entre estos elementos se encuentran:

- 1) El monto del préstamo;
- 2) El período del préstamo;
- 3) La tasa de interés;
- 4) La(s) garantía(s) sobre el préstamo;
- 5) El plan de pago del préstamo;
- 6) Los gastos administrativos;
- 7) El capital del proyecto piloto;
- 8) El nivel de subsidio del CCH;
- 9) Los costos de recuperación;
- 10) La selección de comunidades para el proyecto piloto;
- 11) Los reflujos del proyecto.

Este informe recomienda que el CCH examine estas alternativas a través de un proyecto piloto de crédito con la Asociación de Usuarios de Riego de Punata y las aldeas de Khochi Centro y Khochi Laguna de Punata. Si por alguna circunstancia esta institución prestataria y las comunidades beneficiarias mencionadas no pudieran completar dicho proyecto piloto, los principios presentados en este informe pueden y deben ser aplicados a otros intermediarios y/o beneficiarios.

Después de un análisis cuidadoso, los autores de este informe creen que un programa de crédito es factible y que de hecho sería un realce a la sustentabilidad del Proyecto de Control de la Enfermedad de Chagas. Para que sea exitoso, un programa de crédito debe estructurarse y manejarse cuidadosamente. Este informe le suministra al CCH preguntas y marco general apropiados para el establecimiento de un proyecto piloto que examina ciertas posibilidades de crédito. Si un programa piloto de crédito es estructurado apropiadamente, el Proyecto Nacional de Control de la Enfermedad de Chagas podrá incorporar las lecciones aprendidas para ayudar a mantener dicho programa a largo plazo.

Este informe se divide en cuatro partes:

La Parte I analiza brevemente la enfermedad de Chagas y la importancia del mejoramiento de la vivienda como intervención en la prevención de esta enfermedad;

La Parte II evalúa las opciones del Proyecto de Control de la Enfermedad de Chagas para mejorar la sustentabilidad del proyecto;

La Parte III presenta un Proyecto Piloto de Crédito; y

La Parte IV ofrece recomendaciones y conclusiones para incorporar mecanismos sustentables dentro del Proyecto de Control de la Enfermedad de Chagas.

Executive Summary

The USAID/Bolivia Community and Child Health (CCH) Chagas' Disease Control Project is currently sponsoring a pilot project aimed at combatting Chagas' disease in Bolivia. This four-year pilot project, started in 1991, is designed to test various alternatives for Chagas' prevention to be presented to the government of Bolivia (GOB). GOB will use the lessons learned during CCH's pilot project to implement a long-term national program on Chagas' disease control. Measures tested in the pilot project include:

- 1) Home improvements, including the house and surrounding area
- 2) Community education
- 3) Spraying of houses and surrounding area
- 4) Congenital and transfusional transmission research and screening

This report, written by the Cooperative Housing Foundation (CHF), and sponsored by the Vector Biology and Control Project (VBC) of AID/Washington, managed by Medical Service Corporation International (MSCI), focuses on mechanisms to improve the sustainability of the existing Chagas' Disease Control Project. In specific, this report concentrates on the feasibility of incorporating a cost recovery program, including the establishment of a credit program as part of the home improvement component of the Chagas' Disease Control Project in Cochabamba.

There are at least three ways, that are not mutually exclusive, in which the Chagas' Disease Control Project can improve its sustainability:

- 1) By making resources last longer through cost saving mechanisms;
- 2) By making resources currently used more effective through "effectiveness-enhancing" mechanisms;
- 3) By recycling resources to other beneficiaries through cost recovery mechanisms.

In the first scenario, the Chagas' Disease Control Project would reduce costs, such as the core subsidy provided to each family, in order to offer assistance to more beneficiaries for a longer period of time. In the second scenario, the project would invest more money in promoting Chagas' prevention and encouraging beneficiaries to maintain their home improvements, an up-front investment with long-term benefits. In the third scenario, the project would recover costs through a credit program. This

report recommends a combination of all three. Specific mechanisms for sustainability include:

Cost Saving Mechanisms

- 1) Reducing the core subsidy given to each family;
- 2) Continuing to encourage the use of local materials used for the home improvements;
- 3) Setting up cottage industries where feasible.

Effectiveness-Enhancing Mechanisms

- 1) Launching a publicity campaign on Chagas' to increase public awareness/interest of Chagas' prevention and maintenance;
- 2) Developing educational materials that will help promoters spread the message in a consistent manner.

Cost Recovery Mechanisms

- 1) Requiring beneficiaries to pay the project for materials;
- 2) Establishing a credit program.

Some of the cost saving mechanisms, such as reducing the core subsidy to each beneficiary, will have a direct impact on the burden that the beneficiary will have to shoulder in order to complete the home improvements. One of the critical reasons for establishing a credit program is that it would enable the project to reduce the core subsidy provided to each beneficiary while maintaining project effectiveness. If designed correctly, a credit program is also a good tool for sustainable development for the following reasons. A credit program:

- 1) Serves as a cost recovery mechanism, extending the life of the project and expanding the number of beneficiaries receiving assistance;
- 2) Increases beneficiaries' stake in the project because they are paying for more of their home improvements, thereby increasing their vigilance to maintain them;
- 3) Assists beneficiaries with small loans that will enable them to complete their home improvements more rapidly;
- 4) Attracts donors who want cost recovery and credit included in development projects;
- 5) Teaches people how to use credit so they can participate in other credit programs.

A credit program, however, must be properly structured and given an adequate amount of time and analysis in order to be effective. Bolivia is no exception. The Bolivian poor have had some unfortunate experiences with credit in the past, often being victimized by credit programs. Many of the poor have been offered loans whose interest payments were even greater than their gross annual salary or were offered loans based on the highest expected crop generation. Drought greatly reduced income, making it impossible for beneficiaries to repay. In these circumstances, people lost their guarantees -- their houses, their crops -- because the loans were often unwisely structured. The Bolivian poor became justifiably wary of credit. Past experiences such as these need to be counteracted with proper loan structuring accompanied by a thorough educational program that teaches the staff how to introduce a credit program, the borrowing communities how to handle credit and the financing institution how to service home improvement loans.

This report suggests various elements that the Chagas' Disease Control Project, as a pilot project, must analyze in order to implement a credit program. These include:

- 1) Loan amount
- 2) Loan period
- 3) Interest rates
- 4) Loan guarantees
- 5) Loan payment schedule
- 6) Administrative costs
- 7) Pilot project capital
- 8) Level of CCH subsidy
- 9) Recovery of costs
- 10) Selection of communities for the pilot project
- 11) Project reflows.

This report recommends that CCH test out these alternatives through a credit pilot project with the "Asociacion de Usuarios de Riego de Punata" and the villages of "Khochi Centro" and "Khochi Laguna" of Punata. In the event that this lending institution and beneficiary communities are unable to complete the pilot project, the principles in this report can and should be applied to another intermediary and/or beneficiaries.

After careful analysis, the authors of this report believe that a credit program is viable and in fact would be an enhancement to the Chagas' Disease Control Project. In order to be successful, a credit

program must be carefully structured and monitored. This report provides CCH with the appropriate questions and general framework to establish a pilot project to test certain credit possibilities. If a pilot credit project is properly structured, the national Chagas' Disease Control Project will be able to incorporate the lessons learned to help sustain the program in the long-term.

This report is divided into four parts:

Part I briefly reviews Chagas' disease and the importance of home improvements as an intervention in Chagas' prevention;

Part II reviews options that the Chagas' Disease Control Project has in improving the sustainability of the project;

Part III presents a Pilot Credit Project;

Part IV offers recommendations and conclusions for incorporating sustainable mechanisms into the Chagas' Disease Control Project.

PART I

CHAGAS' AND THE IMPORTANCE OF HOME IMPROVEMENTS IN CHAGAS' PREVENTION

1 Introduction

Chagas' is a vector-borne disease carried by the *Triatoma infestans*, (the "kissing bug" or "vinchuca"), which lives in cracked walls and thatched roofs of homes and the walls of animal corrals surrounding the house in rural areas in Latin America. The disease can be transmitted directly, congenitally or through blood transfusions and is known to cause life-threatening heart disease and intestinal problems years after infection. At present, Bolivia has a higher Chagas' morbidity rate than any other endemic country.¹

CCH, through the Vector Biology Control Project (VBC), enlisted the Cooperative Housing Foundation (CHF) to test the feasibility of incorporating sustainability mechanisms into the project's existing home improvement component in Cochabamba, Bolivia, as a means of improving the current project's effectiveness and extending assistance to future beneficiaries. This report relates specifically to the home improvement component of the Chagas' Disease Control Project and possible sustainability mechanisms, including credit as a cost recovery mechanism. This report is based on findings from a two-week consultancy, held in La Paz, Cochabamba and Tarija, Bolivia in March 1993.

2 Cooperative Housing Foundation (CHF) Terms of Reference

The Terms of Reference guiding CHF's work and this report follow below:

CHF will provide technical assistance to the Chagas' Disease Control Project to determine if the grant program for housing improvements for Chagas' control can be converted to a loan program in Cochabamba as a means of improving the sustainability of the project. Under this consultancy, CHF will:

- Meet with CCH staff and relevant government officials in La Paz/Cochabamba to gather relevant project background information on the Chagas' Disease Control Project (e.g., current financing structure, target community profiles, status of project); Review files on project;
- Hold informal interviews in Cochabamba with potential beneficiaries to determine their interest in participating in a loan program. Assess the market for a loan program for the Chagas' Disease Control Project by determining if there is a demand for loans in

¹ Vector Biology and Control Project, Technical Evaluation of USAID CCH-Chagas Disease Control Project, Bolivia, August 1992, p. 7 .

Cochabamba; if potential beneficiaries can afford a loan from the project; and, if there is the institutional capability to promote and service loans.

- Determine what kind of loans would be the most appropriate and affordable for potential beneficiaries if a loan program is feasible for this project in Cochabamba;
- List possible intermediary organizations, governmental or non-governmental, that would be interested in participating in a loan program in Cochabamba;
- Prepare a report on the viability (benefits, constraints) of a loan program for the project in Cochabamba.

In addition, CHF has also included in this report other mechanisms for the Chagas' Disease Control Project to improve sustainability and a possible Pilot Credit Project in Punata.

3 Scope of Chagas' Disease Control Project

In 1991, the USAID/Bolivia Community and Child Health Project (henceforth referred to as CCH) designed the Chagas' Disease Control Project to test different kinds of intervention in the prevention of Chagas'. Once completed, this four-year pilot project will provide the government of Bolivia with a menu of options in planning a national strategy for Chagas' prevention.

The pilot project has emphasized four different kinds of intervention:

- 1) home improvements (e.g., plastering walls, repairing ceiling, cementing floors, installing windows and doors) and improvements to the areas surrounding the house (e.g., plastering of the animal corrals);
- 2) community education on Chagas' transmission and prevention
- 3) spraying of houses and animal corrals
- 4) congenital and transfusional transmission research and screening

According to studies executed by the CCH project, a strategy combining the first three interventions has been the most effective in reducing reinfestation of the vector in the home and the surrounding areas. In houses that were merely sprayed but not improved, reinfestation rates were found to occur at a rate of 20%, as compared to houses that were both improved and sprayed, with a reinfestation rate of 10%.²

² As cited by Drs. Balderrama and Bermudez.

4 Home Improvements

Until an effective pesticide against the vector can be found, (i.e., one that kills the vector but is still safe to the inhabitants), home improvements become a key component and a central necessity as a means of prevention against Chagas'. CCH has approached home improvements as a public right in the fight against Chagas' and has been able to offer a relatively significant subsidy to beneficiaries to ensure maximum community participation. However, without a continual influx of financial assistance, providing subsidies for home improvements in the fight against Chagas' will no longer be possible. The current situation combines CCH subsidies with contributions in labor and some materials from the beneficiaries:

4.1 CCH Contributions

CCH subsidies provided to each beneficiary generally include the materials that the project provides for a one-time home renovation, such as cement, windows, ceiling materials (tumbado) and roofing tiles. These costs range between US\$150-\$250 per beneficiary. In this report, we refer to this kind of subsidy as a "core subsidy." The spraying of houses and animal corrals is an additional cost on top of this core subsidy.

Other project subsidies that are equally important and cost CCH money include:

- transportation of materials
- labor subsidies, such as training and nominal salaries for local builders (albaniles, peones) and project promoters
- community education/outreach
- technical assistance
- monitoring of project

In some circumstances, CCH in Cochabamba has provided beneficiaries with food, such as oil and meat. This assistance was offered because CCH noted that beneficiaries were forced to leave their home improvements unfinished in order to seek out or earn money to buy food in the city. US PL480 food assistance allowed them to finish their home improvements in a timely manner, thus freeing them to return to their other activities.

These subsidies have enabled project beneficiaries to begin, and often complete their home improvements. However, project funds will not be able to support the vast number of families whose homes have not been "Chagas-proofed" at the current level of subsidy without a substantial commitment of new funding. In addition, there are some beneficiaries who own houses that are much larger than the standard house (e.g., consisting of a bedroom and common room with an animal corral in the back). These larger houses may have numerous corrals and a two-floor house, which the core subsidy does not cover. Even houses that have

been completely renovated will require maintenance that extends beyond the scope of the pilot project, maintenance that is critical for the continued prevention against reinfestation.

4.2 Beneficiary Contributions

It is important to note, however, that the CCH project is not a giveaway program. The core subsidies currently provided by the project are matched by the beneficiaries, sometimes as much as 100%-150%. In the Cochabamba project, on which this report focuses, beneficiaries provided such contributions as:

- local materials
- labor
- food and drink for the albaniles and peones
- water (for purposes of construction) that had to be purchased when none was present

In one circumstance, CHF visited a couple that was constructing their house with only token assistance from the project (e.g., a door and window). They had, however, incorporated many of the Chagas' prevention techniques promoted by the project, such as plastering the walls and the ceiling.

4.3 Incomplete Home Improvements

Despite the subsidies offered by the project and the contributions offered by the beneficiaries, several factors have impeded the completion of many home improvements, a problem that touches upon the efficacy of preventing reinfestation of the vector. Such factors range in scope from economic to social influences, including:

- A village may lack accessible water necessary to make home improvements, (e.g., for concrete mixing and tile making.) This dynamic is particularly relevant during the dry season, a period when farmers are most available to devote time to the project;
- Beneficiaries need to work on their farms when favorable weather conditions (e.g., rain) are present;
- Building supplies are insufficient due to the inability of beneficiaries to come up with enough money to cover their contribution;
- Size of the house exceeds the subsidy covered by the project;
- Family has more pressing priorities than Chagas' prevention and home improvements.

If a home is not renovated completely (e.g., the animal corrals are plastered, but the bedroom

is not or vice versa), the likelihood of reinfestation is tremendous because the vector can easily travel from an unimproved room to an improved room in search of a bloodmeal. Thus, the importance of completing and maintaining home improvements is critical to the success of the program.

4.4 Poorly Maintained Homes

In addition to leaving home improvements partially completed, many households did not adopt important habits to keep their homes Chagas'-free. Some of the household habits that help prevent vector reinfestation include: keeping the walls free from wall-hangings under which the vector can live; hanging up clothes instead of piling them on chairs; keeping animals, frequently carriers of the vector, from wandering through the household. CHF visited several partially improved houses where the owner had continued to store potatoes and other items in the bedroom area under which the vinchuca could easily hide.

Possible reasons for beneficiaries not maintaining their homes are:

- The beneficiary has not properly understood the importance of tidiness in preventing reinfestation;
- Chagas' prevention is not a priority of the beneficiary;
- Behavioral patterns -- such as hanging crucifixes on the wall and allowing animals to wander in the house -- are so ingrained that they cannot be easily changed.
- The beneficiary does not have readily available alternatives to current practices -- such as another secure storage place for potatoes other than the household

The Chagas' Disease Control Project will become more effective in preventing Chagas' if it can find creative solutions to increase people's awareness of their role and ability in preventing the reinfestation of the vector in their homes long after the home improvements have been completed.

PART II

ISSUES IN SUSTAINABILITY

1 Introduction: Issues in Sustainability Facing the Chagas' Disease Control Project

Sustainability is a key issue for development. Many a good development project has been established in a host country but has not lasted beyond the life of the technical/financial assistance because no provisions were made to sustain the project. The CCH Chagas' Disease Control Project, as a pilot project, risks encountering the same difficulties if it does not take some action toward sustainability.

There are at least three ways, that are not mutually exclusive, in which the Chagas' Disease Control Project can improve the sustainability of its home improvement component: by making resources last longer through cost saving mechanisms; by making resources currently used more effective through "effectiveness-enhancing" mechanisms; by recycling resources to other beneficiaries through cost recovery mechanisms.

This report focuses on possible options that CCH and eventually the national program have available in addressing these important issues in sustainability. A discussion on credit as a tool for sustainable development ensues. Finally, this report presents a possible Pilot Credit Project in which these mechanisms can be tested.

2 Cost Saving Mechanisms

One mechanism that would improve the sustainability of the Chagas' Disease Control Project is by cutting back on the costs of the project in order to offer assistance to more beneficiaries and to keep the project running longer. One way of doing this is by reducing the core subsidy provided to each family. Another way of saving costs is to continue to encourage the use of local materials used for the home improvements.

It is important to note that reducing the core subsidy given to each family may be a cost saving mechanism only in the short term. While scaling back on the core subsidy will save the project money, such a measure will most probably have an impact on the quality of home improvements. Families receiving less from the project may be unable to make up the difference in costs to complete the home improvements.

The project could address this negative effect by incorporating a mechanism to enable beneficiaries to shoulder more of the burden of the project, such as through a credit program. Setting up cottage industries, where feasible, would also help those beneficiaries to earn some money to make up for the restricted subsidies. (These mechanisms are detailed below, under Cost Recovery Mechanisms.)

2.1 Reducing the Core Subsidy Given to Each Family

Currently, CCH is providing a subsidy averaging between US\$150-\$250 per household. CCH should continue its studies on what is absolutely critical in terms of home improvements if it wants to scale back on the core subsidies. As the Project Manager at CCH, put it: "Maybe we are building a Cadillac when all we really need is a VW?" In many cases at present, the entire house, including the floor, and animal corrals are being renovated, whereas renovation of a bedroom, the ceiling and the animal corrals may be sufficient as core Chagas' prevention techniques. In such a case, the project could focus on providing beneficiaries with these bare essentials and allow those who want to continue with further renovations to do so on their own time and money.

Unfortunately, scaling back on the core home improvements may have an impact on the effectiveness of the project. According to "experimental work in Brazil . . . and empirical evidence from other countries . . . partial plastering of interior and exterior walls and ceilings does not significantly reduce the number of vectors in the house."³ This, however, still leaves room for examination of the usefulness of cementing the floor, for example.

In general, families tend to use what is given to them, without any incentive to cut costs. Use of more materials does not always improve the quality of the project. Dr. Balderrama cited examples of families using more cement than needed in plastering the outside walls of their houses, a mixture that tends to crack more in the sun than the more traditional, and less expensive mixture using local materials. The advantage of cutting back on the core subsidy is that it will build in an incentive for beneficiaries to cut costs.

Under the scheme, beneficiaries will have to find some way, on their own, to purchase those materials not provided to them by the project.

The advantage of this "free market" approach is that it places an emphasis on the contributions that beneficiaries make to the project. It also incorporates a direct incentive for the beneficiaries to find materials that are local or are the least expensive.

This approach is, from CCH's perspective, also relatively easy to administer. CCH simply decides how much it will provide as a core subsidy. For example, it may decide to give only a few bags of cement, one window and tumbado for the ceiling. Direct savings from these cut-backs can be readily calculated.

The disadvantages of this method include the fact that beneficiaries are already having a difficult time in coming up with their contribution. Home improvements may be delayed or left permanently incomplete as beneficiaries seek out a means of generating income to cover the added costs.

³ Technical Evaluation of USAID CCH-Chagas' Disease Control Project, Bolivia, August 1992, p. 30.

The time involved for each family to procure its own materials will also be an opportunity cost that affects the ability of beneficiaries to earn other money to cover their costs. This method will be particularly burdensome on the poorest of families, usually the most susceptible to Chagas' due to their poor housing conditions. This method will also place an undue burden on families in outlying areas, where supplies are not readily available. Costs for searching for the materials and transporting them back to the communities will be disproportionately larger than those in villages neighboring towns or the city.

2.2 Use of Local Materials

CCH should continue to experiment with and encourage the use of local materials as a means of reducing costs to both the project and beneficiaries. For example, "the use of the juice of the prickly pear cactus "leaf" to thicken the mixture used to plaster walls (revoque) [has thickened and made] more adhesive the lime-water paint mixture applied to the external walls of some houses after wall improvement has been completed."⁴ Such innovative uses of local technology should be further encouraged.

3 Effectiveness-Enhancing Mechanisms

Under this scenario, CCH would invest more money in promoting the project and encouraging beneficiaries to maintain their home improvements, an up-front investment with possible long-term benefits. Specific mechanisms to help educate the public and improve the completion and maintenance of existing home improvements include:

- Launching a publicity campaign on Chagas' to increase public awareness/interest of Chagas' prevention and maintenance;
- Developing educational materials that will help promoters educate beneficiaries on the importance of home improvements and maintenance in a consistent manner.

3.1 Publicity

During CHF's visits to projects in Cochabamba, we were struck by the number of people who had been sensitized to Chagas' through the radio. CCH/Cochabamba was pleased with the success of radio interviews, but noted that it had to scale back on them for fear of flooding CCH with requests for assistance that it could not provide.

However, publicity and generating such public interest may not be such a bad idea and could serve as a good cost saving device for the project. An effective publicity campaign:

- Reduces the amount of education that community workers from CCH must spend in

⁴ *ibid.*, p. 22.

sensitizing communities to the dangers of Chagas and the benefits of prevention;

- Reduces the amount of time devoted to the selection of communities because, if the publicity is effective, communities will come to the project instead of the project being forced to seek out willing communities;
- Increases the probability of success because communities that do approach the project will have identified Chagas' as a priority and will be more interested in addressing/resolving the problem.

The requirements of bringing the Chagas' Disease Control Project to a community, such as beneficiary contributions, should be clearly stated in such publicity. This will avoid an onslaught of communities requesting assistance from the project without seriously expecting to provide their share. Ideally, the radio messages would not incite public panic on Chagas' as a disease, but would encourage people to take necessary measures, such as home improvements, to prevent infection for future generations.

Thus, publicity could be considered a good cost saving mechanism as well as an efficiency enhancing mechanism that, according to CHF, should be pursued if not intensified. Radio would be the most effective medium as television is more expensive and is not as accessible to rural communities where Chagas' is most prevalent.

3.2 Education Materials

Other forms of educational materials currently used by the project, such as flip charts, slide shows and video presentations, will help potential beneficiaries absorb the messages provided by the educators. By using these forms of education, the project will enhance people's understanding of the importance of investing in home improvements and, equally important, completing and maintaining them. Such completion and maintenance of home improvements will improve the ultimate goal of preventing vector reinfestation. In this sense, the project will get "more bang for its buck." Educational materials will also help ensure that a consistent message is presented to communities.

4 Cost Recovery Mechanisms

Cost recovery mechanisms as a means of sustainability imply that the costs laid out by the project will be at least partially recovered. Those costs that are recovered can be recycled and used for other beneficiaries. One obvious caveat about many cost recovery schemes that are launched solely for the sake of cost recovery is that they involve administrative and monitoring costs that often minimize the recovery of funds. Three methods that the Chagas' Disease Control Project can use to recover costs include:

- Selling materials currently provided for free to beneficiaries;

- Promoting and establishing cottage industries as a means of producing materials currently provided by the project and generating income;
- Establishing a credit mechanism so that families are able to shoulder more of the burden of the costs of home improvements because they can extend the period of payment.

4.1 CCH Sells Materials to Beneficiaries

Under this option, CCH would transport materials in bulk to communities. They would be stored in a depository and sold either at market price, wholesale price or a subsidized price to beneficiaries.

The advantage of this method is that beneficiaries would be spared the costs of seeking out and transporting materials. By purchasing the materials in bulk, the project is able to provide beneficiaries with lower prices and uniform, quality materials.

The transportation would not differ from the project's current system of transporting goods to the community. The only difference is that beneficiaries would reimburse the project for some of the costs involved in their procurement/transport.

The administrative costs involved in this option are more complicated than in both the "free market" approach and the current system. Training of the person(s) collecting the monies in the community as well as the collection and monitoring of the revenues by CCH are costs that would have to be incorporated into the final calculation of cost recovery.

4.2 Cottage Industries

In communities that are unable to pay for materials themselves, CCH could set up a cottage industry. Such a system would have two purposes: 1) to enable beneficiaries to make their own materials, such as roof tiles, to reduce the need to purchase materials currently provided by the project; 2) to serve as an income-generating mechanism by selling extra materials on the market. This option has been tested with apparent success in Proyecto Britanico and merits further research.

The advantage of establishing cottage industries is that it enables poorer populations a system by which to pay their share through "sweat equity." It also serves as a good community development tool in that it trains communities in a particular skill; it teaches communities to work together; and it could provide additional income for the workers.

Before launching a cottage industry, however, CCH must assess the feasibility of the production. "Sweat equity" may be unrealistic in projects that demand inordinate amounts of time from the participants with little actual output. Marketing studies should be done before launching an income-generating activity so that participants are not stuck with unwanted reserves without compensation for their efforts.

Cottage industries involve training and administrative costs attached to performing feasibility and marketing studies. CCH would also be involved in setting up the project, start-up costs which the marketing of the product may not be able to recover.

4.3 CCH Provides a Credit Mechanism to Beneficiaries

Under this option, (to be discussed in greater detail below), CCH would establish a credit mechanism through local lending institutions that would enable beneficiaries to receive a lump sum up-front to pay for materials currently provided by the project.

Cost recovery implies the establishment of mechanisms whereby funds used for development purposes, in this case, home improvements, are recovered and recycled to other beneficiaries. This recycling of funds multiplies the number of families which have access to a limited amount of resources. To institute such a system, one has to prevent the decapitalization of the fund by charging interest rates above inflation. Ideally, the fund is also a recipient of new capital injections as the demand for credit increases, exceeding the ability of the recouped funds to cover this expansion.

The advantage of this system is that beneficiaries would be able to fulfill their part of the contribution in a timely manner. In addition, they would be able to pay back the loan in installments or in one payment, depending on the terms established by the lending institution, allowing beneficiaries time to earn the money after the project has been completed.

This system involves the costs associated with administering a revolving loan. Cost recovery is also contingent upon beneficiaries paying back their loans. Training of the local intermediary institutions in the servicing of the loans, community outreach and education of the communities in credit and the monitoring of the loans are all expenses that must be factored in when assessing the final cost recovery.

5 Credit as a Tool for Sustainable Development

Cost recovery is often seen as the only reason behind the implementation of a credit program. The benefit of using credit in the Chagas' Disease Control Project is that it would allow the project to scale back on the core subsidy while enabling the beneficiary a viable means to shoulder more of the burden. The use of credit has other equally if not more important benefits in sustainability that are extremely useful in development. The following is a list of the benefits that credit brings to development programs.

5.1 Project Appreciation as a Function of Personal Investment

Often that which is donated is not adequately valued and maintained because of the effortless way in which it was obtained. Free subsidies do not promote a sense of ownership in the product. When a person sacrifices in order to meet a need, s/he will tend to respect the newly acquired product because of the personal labor/money invested in it. These axioms can

be directly applied to home improvement loans for the prevention of Chagas' disease.

A credit program will enable beneficiaries to participate financially in the improvements of their homes. This financial stake in the outcome will likely motivate beneficiaries to better maintenance of the improvements, a truly desirable effect in preventing reinfestation.

5.2 Financial Potential

The advantages of having access to a lump sum of money as opposed to smaller sums over time include:

- Ability to complete the project

Home improvements need to be completed in order to be effective against reinfestation. A lump sum of money will enable a family to complete their home improvements.

- Decreased construction time

A lump sum of money will enable a family to complete their home improvements in a timely fashion. By finishing the project sooner, the family can get back to their other income-generating activities faster.

- Ability to do more than would have been possible without access to credit

With a lump sum of money, families will be able to make improvements beyond the scope of the project, including those houses that have large corrals or two floors. While the bedroom and corrals are looked at as the "hotspots" for vinchuca infestation, improving other areas in the home will enhance project efficacy.

- Opportunity costs

Access to a lump sum of money will enable some families to pay someone else, better skilled and more efficient, to do the improvements while enabling the owner to attend to normal activities.

5.3 Potential Donor Interest

A project which incorporates a cost recovery/credit mechanism may be more attractive to potential donors. Many donors prefer to invest in projects that incorporate sustainable mechanisms because their monies will go further than a project that simply gives out grants. Project sustainability using local initiatives will be a selling point that could generate further revenues for the project, in and of itself a "sustaining" mechanism.

5.4 Credit Education

A vital aspect of a credit program is that beneficiaries learn about credit through experience: the advantages and disadvantages of credit, money management, the concept of interest and the responsibilities that borrowing money implies are all lessons transferred to the borrower. Once a beneficiary has successfully participated in a credit program s/he has not only educated her/himself, but has developed a credit history which may open the door to other loans in the future.

PART III

PILOT CREDIT PROJECT

1 Introduction: Pilot Credit Project, Cochabamba

Given the advantages of credit as a tool for sustainable development, this report recommends that the Chagas' Disease Control Project test out the many variables of credit in a pilot project. Such a pilot project would provide CCH and the national government with valuable information as to the feasibility of credit within the scope of a Chagas' prevention program and the way in which to implement credit.

The following is a Pilot Credit Project that could serve as a feasibility testing ground for credit within the program in Cochabamba. Under this pilot project, those families within communities targeted for CCH intervention of Cochabamba will have access to loans for home improvements for Chagas' prevention. This pilot project is merely a sketch of possible scenarios that should be more closely examined and tested in order to ensure successful implementation. If successful, this pilot project could be broadened to meet the needs of the Chagas' program in Tarija and elsewhere.

This report specifically names the "Asociacion de Usuarios de Riego y Servicios de Fomento Agropecuaria, Punata, Cochabamba,"⁵ (henceforth referred to as the Asociacion), as the intermediary lending organization and the participating communities of "Khochi Centro" and "Khochi Laguna" of Punata as the beneficiary communities for the Pilot Credit Project. However, it is important to note that the principles set forth in this report could be applied to other local lending institutions and beneficiary groups and that the pilot project does not depend on using these particular parties.

2 Background: Asociacion de Usuarios Riego y Servicios de Punata

The Asociacion de Usuarios Riego y Servicios de Punata is a lending institution that serves the people in and around the town of Punata, located 60 kilometers from Cochabamba. Founded in 1988, as a result of the increased capacity of the recently improved irrigation system in Punata, the Asociacion's objectives are:

- to regulate and distribute the access and use of the water resources coming down from the existing dams in the region;

⁵ "Asociacion de Usuarios del Sistema de Riego y Servicios de Fomento Agropecuaria Punata," Febrero, 1992, Punata-Cochabamba, Bolivia.

- to achieve auto-administration of the operations and maintenance of the system by accessing national and international technical assistance and financing for its members.

The members of the Asociacion are those who were originally involved in the development and construction of the irrigation system and those new users who have joined after meeting the entry requirements and concurrent financial obligations. Presently, the Asociacion has 3,200 participating families from 51 communities in the department of Punata.

Families have access to a certain, predetermined amount of water with which to irrigate their crops and provide for their livestock. This flow is controlled by a system of gates, based on a series of irrigation channels traversing the countryside, whereby water is diverted to the participating families in turn.

Along with the various committees, made up of the Asociacion's members, the institution also has an administrative staff with an accountant, secretaries, credit officials and project technicians. Operating resources are obtained via the fees charged to new members, calculated at 130 workdays at US\$3.50/day payable in cash or in labor, financed by La Corporacion de Desarrollo de Cochabamba (Cordeco). The operations of the Asociacion are managed by an elected body of officials along with representatives of the various communities which meet every two weeks.

In 1991, the Asociacion began a credit program making financing available for agricultural and livestock endeavors. These loans are modest in scope and carry the following terms:

Maximum amount:	US\$500.00
Interest rate:	15% annually
Loan period:	up to 18 months
Guarantee:	water rights and cosigners
Payments:	variable with : : paid by semester

To date, 208 families have participated in the program with an average loan of US\$300. Of these 208 beneficiaries, 204 have repaid their loans, with the remaining four being refinanced.

2.1 CHF Meeting with the Asociacion

Dr. Balderrama and CHF discussed the idea of establishing a loan program for home improvements with a credit official at the Asociacion on March 5, 1993. All parties deemed such a project possible if adequate loan terms could be arranged. As with any successful credit program, the capabilities of both the financial intermediary and potential project beneficiaries need to be closely analyzed and subsequently tailored to ensure cost recovery. In an upcoming meeting, the community representatives and the board of directors will discuss the viability of such a credit project and whether the Asociacion is interested in implementing it.

2.2 Community Meetings

In addition to meeting with a representative of the Asociacion, CHF attended two local community meetings with Dr. Balderrama in "Khochi Centro" and "Khochi Laguna," outside of Punata. At least 40-50 community members were in attendance at each of the meetings. In this region, communities recognize the problem of the vinchuca and the subsequent dangers of Chagas' and understand that home improvements are a good means of prevention. The purpose behind our visit to these villages was to propose a potential home improvement credit scheme for discussion among the community members.

The community expressed notable interest when presented with the idea of participating in such a credit project, asking questions most specifically on the terms of the proposed loans. If the loans adequately reflected the beneficiaries' financial capabilities, CHF believes that a credit scheme would be a feasible undertaking.

One must keep in mind that expressed interest in participating in credit doesn't always translate into action. Operating conditions must be based on reality. An appropriate loan amount and terms must be formulated for each income level, (to be determined after careful analysis), as a prerequisite for success. It is crucial not to set people up for failure by overburdening the borrower.

3 Matching Contributions in a Pilot Credit Project

Upon the establishment of a Pilot Credit Project within the Asociacion, there will exist a variety of financial combinations that a family could pull together in order to improve their homes. This pilot project makes the assumption that there will be a continued core subsidy from CCH in the form of construction materials provided to participating families. Matched with this subsidy will be the resources that the family is willing and able to contribute. The following are possible scenarios in matching contributions:

3.1 Home Improvement Financed by CCH and Family Resources Only

Such a scenario predicts participation by two diametrically opposed family income groups: ones with greater resources and those with very little, if any, disposable income.

Those families that have access to resources would be able to improve their homes without having the need or desire to take out a loan from the Asociacion. The amount contributed by CCH should be looked at as more of an incentive/bait to get the family to participate rather than as a significant subsidy of the home improvement.

Families that have no capacity to pay back a loan would obviously have to rely on the other two financial pillars of the project: their contribution and that of CCH. Such families will need to take the greatest advantage of local materials, self-help construction, and a reduced

level of home improvement. CCH's contribution will make up the difference between total project cost, albeit reduced in scope, and the maximum level of family participation.

3.2 Families Who Finance Their Home Improvements Utilizing a Loan, a CCH Contribution, and an Up-front Contribution

It is within this scenario that the credit component of the project comes into play. In the cases where it is determined that the family has the capacity to take out a loan, the level of CCH's contribution will be decreased accordingly. Families would be allowed to use their loans to cover some of the costs that they might have covered normally up-front. This is based on the fact that, currently, some families are forced to sell such assets as livestock in order to generate enough immediate income to cover their contribution. Loans would help these families generate enough income over a period of time to avoid such dramatic actions. Families could also take out loans to improve their homes beyond what they originally could have done using only their personal contribution and that of CCH. These additional home improvements may make the project more attractive to some of the potential beneficiaries as well as enhancing the effectiveness of the Chagas-proofing.

4 Loan Conditions of a Pilot Credit Project

While the conditions by which the funds will be lent out to the participating families need to be determined based on further discussions with the various parties involved, certain parameters can be laid out to help guide the development of the project.

4.1 Productive Loans vs. Nonproductive Loans

A productive loan is a loan whose investment generates additional income: the income generated by the loan itself should cover at least part of the loan payments. Agricultural loans that enable farmers to purchase seeds, fertilizer, equipment, raw materials are common examples of productive loans.

Traditionally, loans for housing improvements have been considered to be nonproductive, in that, in the short term, the actual construction undertaken does not generate income to pay the loan payments. However, investment in better housing is an investment, in the long-term, in better health. Such investments have a direct impact on borrowers' productivity and ability to generate income, albeit difficult to quantify.

4.2 Loan Amount

Home improvements currently carried out by the families participating in the CCH project cost on average anywhere from US\$200-500. Maximum loan amounts should therefore be set for up to US\$500, based on the level of affordability for individual borrowers. The current average for agricultural loans at the Asociacion is US\$300, a good example of the amount borrowers in this area are capable of repaying.

4.3 Loan Period

The loan period should be long enough to maximize affordability and short enough to minimize external events from interfering with the ability to pay back the loan. When determining the period of a loan, it is important to strike a balance between the amount of the loan, the ability to pay on the part of the borrower and the rate of interest. The project should set a maximum loan period of 24-30 months allowing for lower individual payments where necessary. The project should educate borrowers about the advantage of paying back sooner as a means of reducing interest expense.

The difference in the actual loan period of 18 months for the productive loans and a proposed term of 24-30 months for home improvements is based on the concept of productive loans vs. non-productive loans. It will be necessary to have longer periods to facilitate the successful recovery of the loans.

4.4 Interest Rates

Interest reflects the value of money. Maintaining the value of money is essential if a rotating fund is to be sustained in order to provide future home improvements.

One workshop participant at the CCH meeting in Tarija mentioned that interest rates applied to loans for low income families were responsible for pushing them to default. He suggested that the project should not charge interest on home improvement loans if it intended to recover costs.

However, loan amounts and payback periods should absolutely incorporate interest as a factor in the borrower's ability to repay. If borrowers are unable to pay back loans because of the interest rate, either the loan was poorly structured, or the borrower did not fully understand/accept the concept of interest. Although loans without interest will be cheaper to those who would participate initially in the project, the fund would soon decapitalize. Future beneficiaries would then be deprived of access to credit.

Interest payments are also a necessary and real component of participating in formal credit activities. By not charging interest, the project will be furthering dependency by setting up a false understanding of how credit works.

Currently, the Asociacion charges 15% annually on their agricultural loans, based on the cost of that money. The resources provided for the home improvement project would have a different cost, in all probability, a much lower one due to the project's funding sources. If the seed money for the project arrives at the Asociacion free of charge, then the interest rate would only have to reflect the Asociacion's administrative costs and rate of inflation, thereby enabling the Asociacion to charge nominally lower interest rates.

4.5 Loan Guarantees

Where feasible, the proposed credit project should incorporate the current system of loan guarantees in effect at the Asociacion. In order to receive a loan, the family could put up their water rights as the guarantee. In the case where the family didn't have individual water rights, they could find a co-signer who has such rights. Such water rights are then suspended if the borrower and/or cosigner defaults on the loan.

Looking beyond this unique form of guarantee, the home improvement loans could also be guaranteed by two co-signers deemed capable to assume the financial obligations of the loan. In the absence of water rights as a guarantee, the community and community leadership will play a vital role in the determination of a person's credit-worthiness as well as the co-signers' credit-worthiness. Other basic services similar to water guarantees may also be present, such as potable water and electricity, paid on a monthly basis. These guarantees could be used in loan payback structures where practical.

4.6 Loan Payment Schedule

The payments which the families will make to the Asociacion will be based on the manner in which they earn their living and what is deemed administratively feasible for the Asociacion. Annual payments should represent the maximum loan period offered to the beneficiaries, with interest being collected by semester. Monthly payments could be established for those in a position to pay monthly. In Tarija, a system is currently being analyzed for a credit program using weekly paybacks. Such a system could be assessed in terms of feasibility and administrative costs in this pilot project. Weekly paybacks might be an effective mechanism for dairy farmers who earn income more regularly than agricultural farmers.

4.7 Administrative Costs

To successfully manage a rotating fund, the Asociacion will need to perform certain administrative duties. Such duties will have a cost; a cost which can and should be included as part of the loan to the beneficiary. If these costs are not applied to the loans, but are paid to the Asociacion by CCH, then the incentive to efficiently carry out the management of the fund is diminished. If, however, the ability to cover costs and earn money on the project is dependent on solid credit practices and good recovery, then the incentive to manage the fund well is heightened.

Administrative costs involved in a revolving loan fund include the generation of the individual loans, the cost of the administration and recovery of the loan portfolio. These administrative costs can be applied to the project as an up-front commission, whereby the Asociacion charges a flat fee to manage the individual loan. For example, 2% of the loan amount could be applied to the loan, and paid immediately to the Asociacion, with the family paying back the loan and the commission over time.

A second way to cover administrative costs is via the interest rate, in which, the Asociacion determines how many "points" need to be added to the interest rate to cover their expenses. A third method is to combine both an up-front commission and interest rate charge, with the commission covering the costs of generating the loan, and the interest rate charge covering the administration and recovery of the loan.

4.8 Pilot Project Capital

Resources for initiating a pilot home improvement credit project could come from a variety of sources.

Funds that have been budgeted for project related activities that were not carried out, such as the development of blood banks, could be diverted to the credit project as initial seed capital

Current construction materials being purchased and then donated to communities for home improvements could be scaled back by adjusting the subsidy levels thus freeing up resources for the loan fund.

New resources that are being injected into the CCH program could have an earmarked portion directed to the development and maintenance of revolving credit funds.

4.9 Level of CCH Subsidy

As stated previously in the report, CCH provides the participating families with a certain amount of construction materials in order for them to complete their home improvement. The amount of the subsidy can vary from 50% of the total home improvement cost to less than 25% of project cost. If cost recovery is a principle objective of the project, the subsidy needs to be carefully evaluated.

Due to the nature of the project, in which total community participation is desired to prevent reinfestation, the subsidy plays an important role as a motivating agent for community involvement. In many of the communities, there are those who, for various reasons, will or cannot participate without a CCH subsidy. Some families may not deem Chagas' and home improvements as a priority. It is the subsidy, be it minimal, (e.g., a free door and window), which may encourage some uninterested families to invest their own resources in improving the home. Elderly people may see little incentive to participate because they are old and are going to "die anyway." The subsidy may help them see that it is better for their families and community to improve their home. Then there are the poorest families that may have a great desire to improve their homes, yet don't have the personal funds or the capacity to take out a loan to do so. It is here where the bulk of the subsidies given out by CCH could be distributed.

4.9.1 Progressive Subsidy

A progressive subsidy is one in which those with less receive more and those with more receive less. A progressive subsidy would have established parameters whereby there are minimum subsidy amounts, such as the motivational amounts for reluctant families, and maximum amounts to allow the poorest families to improve their homes in the most elemental way. CCH currently has an informal system of progressive subsidies; for example, a widowed woman will tend to receive more materials than a married couple. A formal progressive subsidy and loan system would recover some of the costs currently being donated by CCH by requiring the families with the capacity to borrow to pay more.

However, there is the all too real possibility that conflicts may arise within the communities if varying level of subsidies are being given. Furthermore, such a system will require more administration than a flat subsidy. It is precisely here that the project promoter needs to stress the need for community cohesiveness and recognition that families have different needs and abilities, understandably not an easy task.

4.9.2 Flat Subsidy

A flat subsidy is based on the argument mentioned above that conflict would arise if subsidy levels are different. If total community participation is desired, a flat subsidy would have to be based on the amount that the poorest family needs in order to complete their home improvement when matched with their individual contribution. Subsidies set at this level would in effect increase the costs that CCH must expend in order to carry out the home improvement component of the project because the richer community members would be subsidized at the same rate as the poor.

4.10 Determining Which Costs to Recover

The current CCH operation encompasses a wide variety of activities such as home improvement, education and promotion, spraying, blood sampling and analysis, and overall project administration. These are all real costs, and any cost recovery program must decide what it aims to recover.

Given the income level of the beneficiaries, realistically, the project can hope to recover only the direct resources invested in the home improvement project, and then only on a partial basis. To completely eliminate the CCH home improvement subsidy or attempt to include educational, promotional, medical and/or overall administrative costs would in effect price most families out of the project. CHF feels that project should recover as much of the direct construction costs as possible, as well as the administrative costs that the Asociacion would incur in managing the fund.

4.11 Selection of Communities for the Pilot Project

As stated before, this report focuses on establishing a revolving credit fund at the Asociacion and member communities for the purpose of establishing a pilot project. However, the underlying project guidelines and structure can and should be adapted to other potential financial intermediaries and the populations they serve.

At the pilot project phase, however, initial community selection is crucial in that these new communities will in effect determine the feasibility of a cost recovery mechanism. As the project grows, the importance of individual community selection diminishes because it eventually reaches a critical mass whereby the project can sustain itself on credit activity of many communities as opposed to the level of credit activity of just one or two communities.

The selection of communities that have access to water and to the markets of Punata and Cochabamba, as is the case of those mentioned for this pilot project, make the region a good place to experiment with credit and cost recovery. Access to water is important because it has a notable impact on crop production and livestock raising, increasing both income generation and health. Proximity to urban centers is beneficial in that opportunities for non-agricultural income are increased.⁶ Such income can function either as a substitute for traditional agricultural income negatively affected by adverse climatic conditions or as a supplement to agricultural income earned during natural crop production slowdown.

4.12 Project Reflows

4.12.1 Rotating Credit Fund

The pilot project should be designed so that a rotating credit fund will be established within the Asociacion from which families will have access to home improvement financing. In order to develop a fund which is to some degree self-sustaining, interest must be at least tagged to inflation. As new resources are made available to the CCH program, capital could be injected into the fund to make it possible to increase the number of communities served.

4.12.2 Community Maintenance Fund

Due to the need for families to maintain their improved homes, a community maintenance fund could be set up with the money recovered from the initial loans. This fund could then, in turn, be tapped, in the form of credit to assist families in this upkeep. This fund could also pay for the periodic sprayings which are also needed to combat reinfestation of the homes.

⁶ In a study of member-income carried out by the Asociacion in 1989, 53% of an average gross annual income of US\$1,200 was derived from non-agricultural sources.

5 Countering Apprehensions about Credit with Proper Loan Structuring and Education

Credit is a form of assistance. It involves providing access to money to people who are in need of money but do not currently have enough to accomplish their objectives, in exchange for paying the money back at a later time. Many people fear credit because of past experience when loans were not appropriately structured and people were forced to forego the guarantees attached to it. Credit no longer appears to be a form of assistance, but an evil to be avoided. These are precisely the attitudes toward credit that need to be addressed through a strong educational component accompanying the home improvement loans. Some of the following bad experiences with credit could be addressed through an educational component:

5.1 Political Promises

Over the years, politicians in Bolivia have manipulated credit mechanisms, promising to forgive loans in return for votes. Often the votes were garnered but the promised loan relief was not, causing mass defaults. Many may see paybacks as an avoidable obligation, thus making default that much more likely.

The program would have to educate people that politicians will not forgive these loans and that borrowers will be expected to pay loans back, interest and all, or risk default. In addition, people should be taught that successfully fulfilling their obligations will help them in future credit programs.

5.2 Unwise Credit Structuring

Financial institutions have often made unwise credit decisions or have had agendas other than recovery when approving loans. Such hidden agendas may include diversification of crops to replace coco production. The director of AgroCapital, an agricultural lender in Cochabamba, spoke of PL 480 loans where the interest payments alone exceeded the annual income of the beneficiaries. The outcome, as expected was default. Borrowers, as he said, were "victimized by the credit."

If the loans are properly structured, people will not be overburdened and will be able to pay back their loans without losing their guarantees. In addition, using water as a guarantee may be less threatening than losing a house, but threatening enough to pay back the loan. Such differences should be emphasized in educational campaigns.

5.3 Poor Weather Conditions and Crop Production

Yet another influence on credit and what it implies is the long list of farmers who took out loans based on an expected crop yield only to have drought reduce expected income to a level incompatible with loan repayment. Guarantees such as homes, land and trucks were lost, instilling a sense of caution and fear regarding participation in future credit programs.

Once again, if loans are structured to take into consideration the possibility of poor weather

conditions, people will not be overburdened. However, catastrophe is always a possibility. An educational component would have to reassure people that the project will work with borrowers in the event of such a catastrophe to find ways in which to pay back the loan, but that the loan is still to be repaid.

6 Credit Education Guidelines

Due to the public apprehension and, in some cases, misunderstanding of credit, the project must look to educate not only the potential beneficiaries, but the promoters and even the CCH staff that:

- Credit, including interest, has to be based on the ability to repay the loan.
- Not all families will have access to credit or to equal amounts of credit.
- Credit involves responsibilities such as prompt and complete payment.
- Credit is an assistance where needed funds are made accessible to assist families in completing their home improvements in a timely fashion. For example, access to credit will alleviate the need to sell a cow in order to build a roof. Instead, families will be able to sell the cow's milk and pay back the loan over time.
- There are other forms of loan guarantees, such as water, that don't involve putting up one's home or land title as collateral.
- Loans will not be forgiven and borrowers will be expected to follow the loan terms, or risk default.
- Successful participation in a credit program will help build lenders confidence in the borrower, gaining them access to future credit activities; likewise, failure to pay loans back in a timely manner will leave the borrower with a bad credit rating.

Educational materials should be developed that help communicate such information and give positive examples of people paying back their loans. The use of the current CCH promoters could be trained to undertake this credit education or a new promoter could be assigned to the Asociacion.

PART IV

RECOMMENDATIONS AND CONCLUSIONS

1 Recommendations

1.1 Develop a Pilot Credit Project for Home Improvements

- Select a local lending institution interested in participating as an intermediary in such a program. (A potential financial intermediary for this pilot project could be the "Asociacion de Usuarios de Riego de Punata.")
- Select one or two communities that would be interested in participating in such a program. (Potential communities to participate in the project would be "Khochi Centro" and "Khochi Laguna" of Punata.)
- Determine, according to the community and financial institution involved and based on the criteria in this report: the loan amount; loan period; interest rates; loan guarantees; loan payment schedule; administrative costs; pilot project capital; level of CCH subsidy; recovery of costs; and project reflows.
- Provide credit education to communities, the lending intermediary and CCH staff.
- Monitor the lending process throughout start-up and implementation.
- Examine experience in Tarija with Cochabamba to determine applicability of credit programs.

1.2 Experiment with Mechanisms for Sustainability

- Reduce core subsidy provided to beneficiaries.
- Develop a publicity campaign that could be broadcast on radio to advertise Chagas' prevention techniques and the credit program.
- Test efficacy of local construction materials in home improvements for Chagas' prevention for further use within project.
- Experiment with cottage industry development as a means of construction materials production and income generation.

- Develop more educational materials (slides, videos) for home improvement construction and for maintenance of home improvements/tidiness.
- 1.3 Assess Mechanisms for Sustainability
- Determine the impact that cost recovery mechanisms, such as credit, has on the sustainability of the project;
 - Assess the impact that other mechanisms for sustainability have on the project.
 - Determine the appropriateness and application for a national Chagas' prevention program.
- 1.4 Expand Mechanisms for Sustainability to the National Program on Chagas' Prevention
- Using the successful components of the pilot credit project, expand the pilot credit project into a credit program under the national Chagas' Disease Control Program.
 - Incorporate other successful sustainability mechanisms (cited above,) into the national Chagas' Disease Control Program.

2 Conclusion

Home improvements, education and fumigation all play a vital role in the fight against Chagas' disease. Currently, home improvements being carried out by CCH are helping to prevent reinfestation of the vector. However, the project must look to find a means of sustainability in order to improve the effectiveness of the project and to continue project activities and increase the number of houses improved.

Sustainability for the Chagas' Disease Control Project can be achieved through cost saving mechanisms; effectiveness-enhancing mechanisms; and cost recovery mechanisms. Some of the components of these mechanisms are: scaling back on the core subsidy provided to beneficiaries; promoting the use of local construction materials; using radio as a means of publicity and public education; and establishing a credit program.

The introduction of credit can play an important role in increasing the ability of the communities to improve their homes while allowing CCH to expand their project outreach. Credit, along with serving as a cost recovery mechanism, will also benefit the CCH project in other ways. The ability to complete home improvement projects, in an efficient manner, will improve the prevention of Chagas' vector infestation. By investing in their own home improvements, beneficiaries will have a greater stake in their maintenance because of the investment. Borrowers will also gain the valuable lesson of learning how to use credit. Finally, improving the sustainability of the Chagas' Disease Control

Project through a credit program will also be attractive to potential donors.

If sustainable mechanisms are to be incorporated successfully into the CCH program, their design and management will require further analysis and monitoring. Due to its complex nature, a credit program, in particular, must be structured properly in order to improve its success. A Pilot Credit Project, as recommended in this report, would enable CCH to test the different criteria and assumptions involved in establishing a credit program. A thorough exploration of credit will provide the government of Bolivia with a tool for sustaining the Chagas' Disease Control Project in the long-term.

_ APPENDICES

Appendix 1 : Itinerary

February 27:		Leave Washington, D.C.
February 28:		Arrive La Paz, Bolivia
March 01:	La Paz	Briefing with Dr. Kuritsky Fly to Cochabamba
March 02:	Cochabamba	Meetings with CCH/Cochabamba staff
March 03:	Punata	Visit to CCH Communities, Punata
March 04:	Cochabamba	Meetings with AgroCapital, Arvin Bunker PDAR, Hunan Rios Universidad de San Simon, Dr. Gonzalo Tapia
March 05:	Punata	Visit to CCH communities Meeting at Asociacion de Usuarios de Riego de Punata
March 06:	Cochabamba	Work on report
March 07:	Punata	Community Meetings: Khochi Centro and Khochi Laguna Fly to La Paz
March 08:		Fly to Tarija
March 09:	Tarija	Visit to CCH/Habitat Communities CCH Workshop
March 10:	Tarija	Presentation on credit and sustainability programs
March 11:	La Paz	Write draft report
March 12:	La Paz	Finish draft report

Debriefing with Drs. Kuritsky and Arata

March 13:

La Paz

Fly to Washington D.C.

Appendix 2 : Contacts

USAID/La Paz

Mr. Charles Lewellyn, Project Manager, CCH

CCH Project/La Paz

Dr. Joel Kuritsky, TACS, CCN Project
Dr. Alvaro Munoz, Director

CCH Project/ Chagas' Components

Dr. Fanor Balderrama, Coordinator, Cochabamba

VBC/Washington D.C

Dr. Andrew Arata, Deputy Director

Programa Desarrollo Alternatiu Regional (PDAR)

Mr. Hernon Rios, Gerente Administrativo, PDAR, Cochabamba

AgroCapital, Cochabamba

Mr. Arvin Bunker, General Manager

Universidad Mayor de San Simon, Cochabamba

Dr. Gonzalo Tapia T., Proyecto Control Enfermedad de Chagas

Asociacion de Usuarios de Riego de Punata

Habitat, PNUD

Dr. Irene Vance, Coordinator, Bolivia (Proyecto Tarija)

Appendix 3 : Bibliography

1. Asociacion de Usuarios del Sistema de Riego y Servicios de Fomento, Agropecuaria, Punata, February 1992, Punata-Cochabamba, Bolivia
2. Borrador Proyecto de Salud Infantil y Comunitario Programa Control de la Enfermedad de Chagas, Analisis Financiero y Modelo Economico, La Paz, 4 de Septiembre 1992, VBC Report No. 81337
3. Chagas' Disease, VBC Tropical Disease Paper No. 6, Robert J. Tonn, Ph.D., MPH, March 1991
4. Diagnostico y Profilaxis de la Enfermedad de Chagas, Campero-Mizque, Informe Final 1992, Proyecto 02-07-01-02, Universidad Mayor de San Simon, Programa Desarrollo Alternativo Regional Unidad Sanitaria Cochabamba, Dr. Gonzalo Tapia T.121
5. Investigations on the use of Insecticide-based paints for the Control of Triatomine bugs, VBC PA-022, Lawrence A. Lacey, Ph.D., Antonio D'Alessandro, M.D., Ph.D.
6. 1992 Work Plan and Technical Assistance to Bolivian Chagas' Disease Control Program of the CCH Project (511-0594), January 18-February 9, 1992.
7. Programa Control de la Enfermedad de Chagas' Guia Ilustrada Para enfiemamiento de Promotores, Cochabamba, Bolivia, Fanor Balderrama, Victor Chavea, Armando Vega (Ilustraciones)
8. Resultados del Estudio de lo linea de base en las Areas de Trabajo, 1991, Julio 1992, Programa Control de la Enfermedad de Chagas, Fanor Balderrama, Hernon Bermudez, Fustino Torrico, Antonio Gomez, Juan Carlos Leas Plaza.
9. Resultatdos de la Evaluacion de las Viviendas Respues del Proceso de Mejoramiento en las Areas de Trabajo de Cochabamba, Tarija y Chuquisaca, Julio, 1992, Cochabamba, Bolivia, Programa de Control de la Enfermedad de Chagas, Fanor Balderrama, Hernan Bermudez, Juan Carlos Lea Plaza, Antonio Gomez
10. Technical Evaluation of USAID, CCH-Chagas' Disease Control Project, Bolivia, August 1992
11. VBC Report No. 82061, Steven Ault, M.S., Jesse M. Hobbs, Sc.D., Robert E. Klein, Ph.D., Rodrigo Zeledon, Sc.D.
12. VBC Report No. 82236 A, Andrew A. Arata, Ph.D.