Housing Improvement in Endemic Disease Regions

The Chagas in Bolivia

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Introduction

A wide territory with particular characteristics prevailing in 17 countries in the American Continent has been defined as the Endemic Chagas Disease Region. It can also be mentioned as another expression of the severe poverty within the region expressed not only in mortality and morbidity rates, but also in housing construction quality indicators.

This paper concerns itself particularly with the implications of the Chagas Disease in the rural areas in Bolivia and its relation with housing improvement strategies as the most serious possibility to overcome the risk of illness. There are two main sections. The first is a brief description of the disease itself and the national policy framework, the institutional strategies to control Chagas vector, the role of the different levels of actors involved in the topic, including the Popular Participation Law. A description of the main general housing conditions in the endemic area is also included. This part represents a short diagnostic of how the problem is being taken by the government based on the last intervention experiences.

In the second part I suggest a proposal to complement and contribute to the National Chagas Control Programme with the implementation of a housing improvement component. As a whole the paper shows a highly and significant need to be taken seriously by the government and the private sector with a wide popular participation. The proposal looks for developing a systematised intervention for housing improvement within the Chagasic area assisted by the World Food Programme in Bolivia.

The Disease

The World Health Organisation (WHO) and the Pan American Health Organisation (PAHO) consider Chagas Disease the most serious parasitic disease in Latin America and the main cause of heart disease in the region. An estimated 100 million people are at risk and 16 to 18 million are infected in several countries in the Americas. The World Bank 1993 Development Report establishes that Chagas is the fourth most serious health problem in Latin America (after respiratory and diarrhoea illness and HIV infection) as measured by years of life lost adjusted for disability.

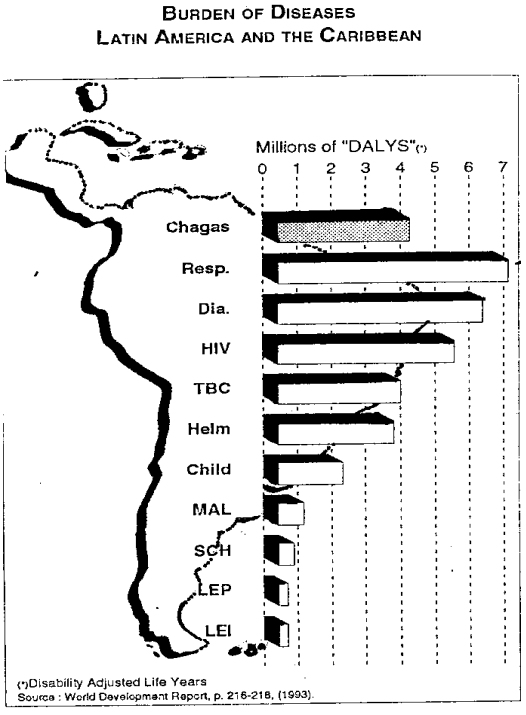

Figure 1

Chagas Disease is named for Carlos Chagas, the Brazilian scientist who described the disease already in 1908 and identified the vector and parasite as *Trypanosomacruzi*.

Chagas Disease occurs only in the Western Hemisphere, therefore the disease is also known as South American *Trypanosomiasis.*

Figure 2
Endemic Chagas Region in the Americas
Source: PAHO Status of Chagas Disease in the Region of the Americas.1984

Vectors can transmit Chagas infection congenitally or by transfusion of blood. The V*inchuca (which is the popular name of the bug)* bites host and defecates, depositing *Trypanosomes* on skin in faeces while person is sleeping, usually during the night in darkness. Bugs live inside the houses between the adobes of the walls or in the roof straw. Many have been found also in stored clothes or behind papers or pictures hanged on the walls. Host contaminates wound by scratching. *Trypanosomes* enter blood stream, multiply and infect cells of the heart, oesophagus and colon. Year's later infection may result in intestinal abnormalities, heart disease and cardiac arrest.

It is important to note the use of the endemic term in this paper as a biological term applied to an organism which is found only in a particular region, also applied to an infection disease habitually present in a certain area as a result of permanent local factors.

Rates of housing infestation of Chagas vector are associated with poor housing conditions and the proximity of domestic animal quarters to human living areas mostly in rural areas.

The rates of Chagas infection in Bolivia are the highest in comparison to any other country in Latin America. Half the country is considered endemic and estimated 1.5 million people are infected.

The reasons to connect this health topic with housing considerations and housing improvement proposals might seen obvious, but there are three main aspects to be highlighted:

First, because houses with cracked mud (adobe) walls and mud with straw and thatch roofs provide the ideal habitat for the vectors. Dogs, guinea pigs, racoons, cats, rabbits and goats are important domestic reservoir hosts. It is common in rural areas of development countries to find domestic animal quarters close to human dwellings and many times animals walk free inside the rooms.

Secondly, because there is no adequate medical intervention for Chagas Disease, treatment options are limited and no vaccine exists.

Finally, because investigations proved that the best way to reduce the risk is eliminating vectors habitat in and around the houses.

Consequently all national intervention and efforts must be done on vector control to overcome this serious damage.

Bolivia-Chagas Disease

Background of the Country

Bolivia is an inland country located in the heart of South America. It shows great contrasts in its three main Eco-regions: altiplano, valleys and tropics, and due to the more than 20 different cultures and ethnic original groups that live in the extended territory of 1.098.580 Km². The official language is Spanish due the Spanish colonisation. In 1825 Bolivia became an independent nation. There are also main original languages as mother tongues such as: Quechua, Aymara and Guarani in correspondence to the main original ethnic groups.

According to the 1992 National Population and Housing Census, Bolivia is a country with more than 7.5 million inhabitants, 52 % of them are settled in urban areas and 48% in rural. As in many other countries population of rural areas move into the cities in search of better living conditions. Due cultural traditions and mine exploiting as the main productive activity 70% of the population is settled in only one third of the territory, mostly in the highland and valleys. The other two thirds of the territory have low density and road communication system is a very serious problem. According to the Human Development Indicators almost 70% of the population is considered under poverty and extreme poverty categories.

The national rate of population growth is 2.1% annual. In the last decades it has been accomplished for a rapid urbanisation process. The urban population concentrated in cities over 2000 inhabitants increased from 42% in 1976 to 58% in 1992. But together spontaneous settlement grows up without planning and services. In general terms people look for their own housing solutions.

In the rural areas 70% lack of drinking water is one of the main causes of diarrhoea, which is also the principal cause of death in children. The infant mortality is estimated in 75 death per 1000 live births.

Around 60% of population lack of adequate shelter and 80% of low income families are themselves builders of

their own houses, relying on their strong tradition of self help construction system, under community or individual forms without any help of the state neither of the private sector. Related with the housing conditions the national statistics show that 26% of the houses have only one room, 60% presents overcrowding, and 58% of the urban population does not have access to sanitation. Only 73% of the urban population have access to potable water and only 27% in the rural areas. Access to sanit ation systems: 42% in urban areas and only 13% in rural.

The most important advantage for Bolivia towards those dramatic background data is the traditional experience in community organisation and participation due its condition as a still rural country with strong traditional cultures living together.

Chagas Disease in Bolivia

Chagas disease occurs primarily in the valleys, plains and forests of six of the nine departments of Bolivia: Cochabamba, Potosi, Tarija, Chuquisaca, Santa Cruz and La Paz, lying between altitudes of 300 to 3.500 meters above the sea level.

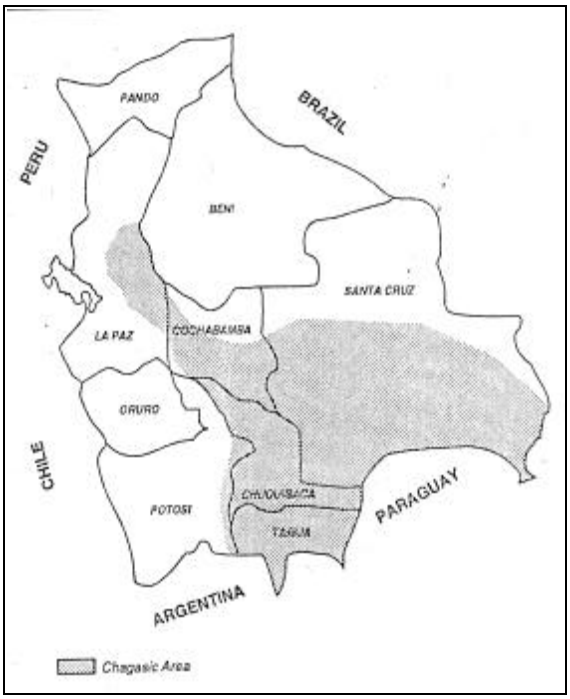

Figure 3

Chagas Area in Bolivia Source: Ministry of Health. Bolivia. 1999

Main epidemiological indicators: [1]

Endemic region:	60% of the territory
Population on risk:	3.700.000 inhabitants
Seroprevalence	40%
Chagasic Cardiopathy	15% to 28%

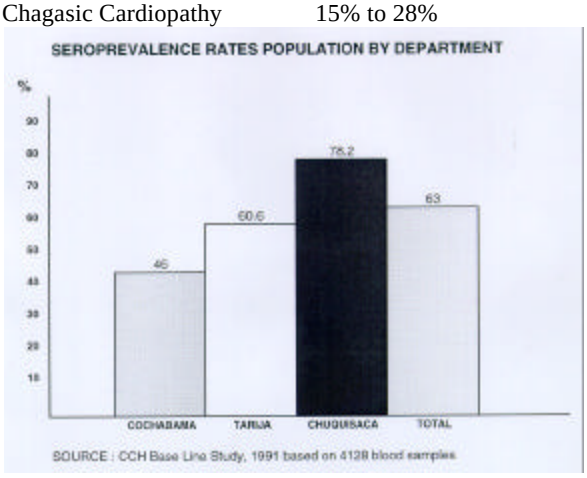

Figure 4

Clinical and epidemiological data on Chagas disease in Bolivia are somewhat limited; many important reports have not been published. Nevertheless some data do exist and provide certain insight into the ominous public health problem that the disease represents for the Bolivian population. Indicators of public health impact include household *trypanosomacruzi* infestation rates, seroprevalence rates and assessments for mortality and morbidity.

In general household infestation in Bolivia are higher in the rural and periurban areas, but infestation of houses in urban areas certainly occurs. Regardless of the locale infestation rates are always higher in poorly constructed houses. In rural areas the houses are built with local materials, almost always with adobes in the walls without any plastter and they have many animals that transport the vinchucas inside the houses. By other side, when people leave rural areas and move into the cities, they carry many things with them especially animals and clothes where busgs might be hidden. The periurban houses do not differ too much from the rural houses, they are also from adobe with out plastter and it certainly favours its residence in periurban cities and cities with less prevalence.

Infestation prevalence rates compiled from various sources in Bolivia can be summarised as follows:

Rural:	70% - 100%
Peri-urban:	40% - 60%
Urban:	20% - 40%

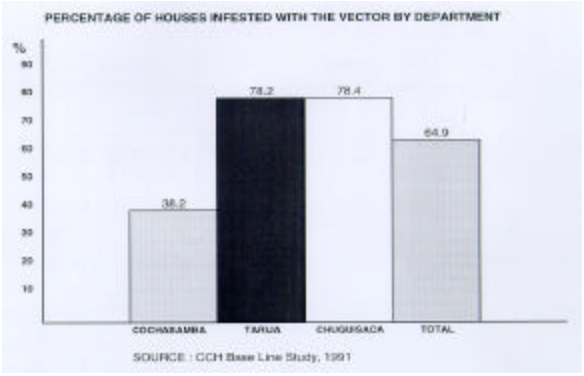

Figure 5

[1] Ministry of Health. National Direction of Health. National Chagas Control Programme. Bolivia 1999

Consequently following the household infestation rates, there is a correspondence with the number of cases of people infected with the disease at a specific time within a well defined area, in terms of Chagas Disease prevalence in Bolivia, that certainly shows higher rates in rural areas. Poverty conditions expressed in lack of infrastructure and basic services, high grade of crowding and quality of construction favours household infestation by the *vinchuca*, which is the Bolivian popular name for the bug.

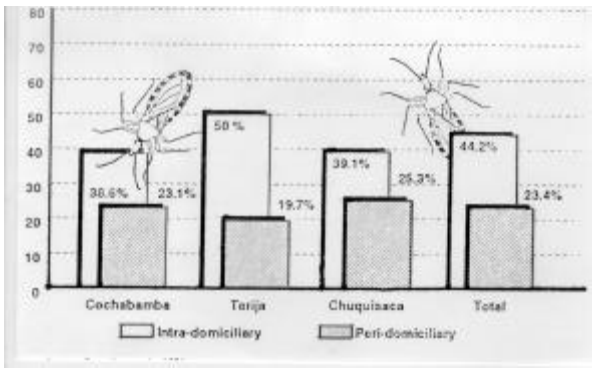

Figure 6 Intra and peri domiciliary infestation
Source: CCH Base Line Study.1991

According to the health system data, people in risk are estimated in 3.700.000, one half of the total population. Within the endemic region the critical indicator of Chagas prevalence in Bolivia is estimated in a 40%. So there are around 1.5 million persons that are supposed to be seropositive for Chagas Disease, or in another form we can say that one of each five persons in Bolivia is expected to be infected. (20% of the total population).

According to the average family size of five members, the Chagas prevalence of 40% represents 300.000 families. And that means that the same number of houses needs to be improved, rebuilt or sprayed just in the endemic region. Comparingly with the national qualitative housing deficit estimated in 700.000 houses, the rate of Chagas prevalence is taking 43% of them.

The national concept for qualitative deficit defines the number of houses that have not reached the criteria of minimum standard such as: quality of building materials for floors, walls and roofs, functionally spaces and finally access to potable water and basic sanitation.[2]

Collected information of the health sector shows that in eight years of the running National Chagas Control Programme and together with private organisations, around 25% of the infested houses could have been improved and only needs spraying and around 20% of the houses within the area do not need any improvement but still a 55% (165.000) missing represents a great national challenge.

During an important experience made in an *USAID* financed project, *Community and Child Health Project (CCH)*, carried out until 1997, a base line study has been developed with data based in epidemiological, entomological and social behaviour aspects in three of the main regions infested by the vector: Cochabamba, Chuquisaca and Tarija, taking place in 1037 houses, 4128 blood samples from persons living in houses were serological examinated and 13.000 peri and intra domiciliary vector captured.[3]

The results of the study are just dramatic as shown in the following figures:

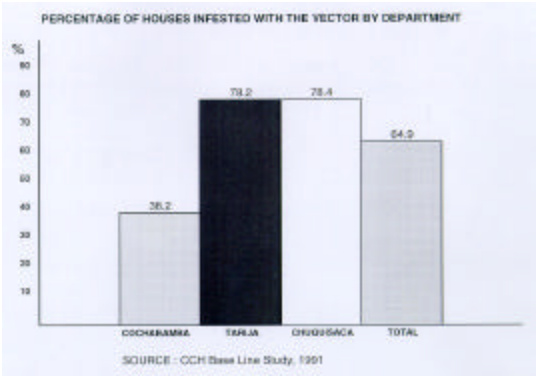

Figure 7

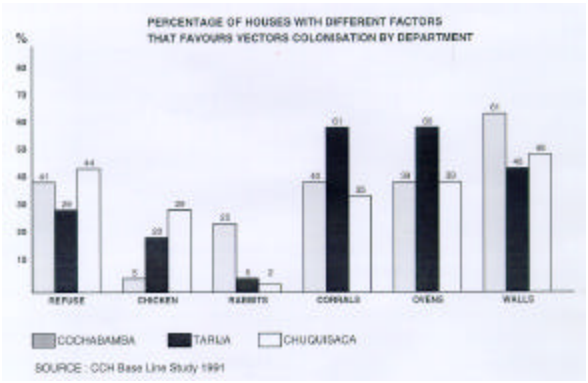

Figure 8

As the most highly endemic country Bolivia is also likely

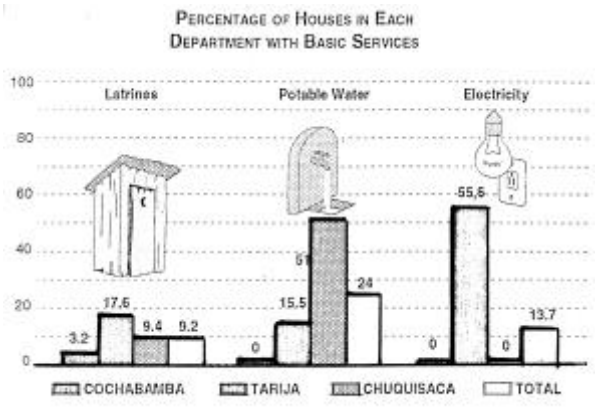

Figure 9 Source: CCH Base Line Study 1991

[2] Bolivian National Housing Policy, 1997

[3] Chagas Disease in Bolivia, the work of the CCH ChagasControl Pilot Program, 1994

to suffer more intensely the negative socio-economic impact of the disease, especially by reduced productivity of the ill persons.

Housing Conditions in the Endemic Area

Based on several interviews made in the past experience developed by Pro Habitat Foundation and the CCH Project in three of the main departments within the Chagas Disease region, there are some important conclusions related to housing conditions to be considered:

There is a strong awareness in the communities about what Chagas Disease represents for their health and the need of housing improvement as a prevention solution

The families affected are owners of their lands but the houses are poor constructed. The families would like to participate in any programme that would provide them services or assessment for housing improvement and it is possible to afford a small amount per month under probably collective or individual self-help system

Even though people have experience in organisation and participation, they need assessment to organise themselves in a housing improvement programme with strong construction techniques training.

There have been some experiences of credits for rural production improvement developed by NGOs with different results.

The traditional patterns of housing construction vary from one to another ecoregion within the endemic Chagasic Disease area. In general permanent-housing solutions depends on the natural resources that people can find available around their site Three major types of housing can be considered in order to the use of local building materials for walls and roofs.

Improved adobe housing in Tupiza.

Wall houses built by adobe and mud, wall houses built stones and mud, wall houses built by wooden structure and mud. Roofs with timber structure covered with straw And mud. Roofs with wooden structure covered with clay tiles. Roofs of timber structures covered with earth, beams, branches or palms. The most expanded typology is the one of Adobe walls with straw and mud, or clay tiles roofs, but also corrugated steel sheets.

Families live quite far from each other with a dispersed layout. These situation difficults communication and expected services supply.

Use of space and functions

Related to the use of space it is important to note that as poor the family is there is no a monofunctional use of space. Covered space becomes into multifunctional purposes. The use of space and the progressive building are directly related to the income situation of the families.

There are considered very poor sectors with only one small room as a house solution and highly overcrowded.

Other families with sort of better incomes build upgraded new rooms given special functions as kitchen, bedrooms, dinning-room, storage for products, tools and others.

The dwelling as a whole consists not only in the covered spaces, but also in galleries and not covered spaces where family members develop different activities. The dwelling conformation usually starts building the first room that will be used primarily as a bedroom, besides of protection, resting, reproduction, this room will cover another basic functions such as preparing and eating the day meals, storage for agricultural products and tools for labour.

Regarding to the family possibilities the dwelling usually grew up around a central courtyard (patio). New rooms will be added for kitchen, bedrooms and store basically.

The courtyard (patio) is a multifunctional open space where family members develop domestic tasks and social activities.

There is often a hemisphere oven used for baking bread and meat in special festivities, out side and not far from the house, but independent. The traditional wood burning stoves with free collected fuel are used for cooking either in the courtyard or in one small and dark room

In general there is no latrines and family members normally go outside on the fields.

Traditional Building Techniques

Earth and stone are the most important local building materials that in general are found in the site close to the family lots. Dwellings traditionally are achieved mostly with adobe walls. Adobes are fabricated by the families themselves with water and straw mixed to the earth and dried at sun during three or four weeks.

There are many places where plenty stones are available and stones build housing walls with earth as mortar. Small rooms and thick walls are the result.

In both cases, adobe wall houses and stone wall houses foundation laying methods are similar. After digging a ditch it is filled with stones and mud mortgage.

Almost never a concrete foundation will be seen, few exemptions when houses are close to the cities and sand and gravel are available free.

From the riverbeds sand and gravel are mostly available free, but transportation to the highland is certainly a problem.

Roofs are in general single and both sides slopping roofs made of timber and covered with a mixture of earth and straw that easily favours vinchuca habitat.There are also roofs with wooden structure to support clay tiles,

when clay and wood are available for little or no cost.There are many communities especially in the high lands where absence of timber for roofs can be mentioned as a real problem for construction.

The inside floors are usually of compacted earth

Windows are few and small with wooden frame when possible. Darkness inside certainly favours to keep the vinchuca alive and hidden.

Inside and outside walls are plastered with mud and straw that also favours vinchuca habitat when starts cracking. When plaster is done with mud there are no painting possibilities. Many houses do not have plaster in walls and that is worst to keep the vinchuca in the walls free and confortable.

There are places especially in Chuquisaca, Tarija and Potosi where clay is an available local material to make bricks and tiles. Small-scale production is also done by hand and with basic tools, but certainly firewood as energy source for small ovens is a problem.

Lack of technological know-how to optimise the use of local building materials should be taken on mind.

As non-local building materials can be mentioned cement for foundations and floors, lime to plastern walls mixed with cement, and wood for roofing structure, windows and doors.

Basic services

Lack of basic services as water, sanitation and electricity in the households is general.

When houses are so far one of the other basic lines to provide water conection is a real problem for health.

Some families do have their own depot for water supply and in some places there are collective water depots.Few latrines . No hygienic education has been develop due lack of water

Refuse is just left outside.

Adobe housing non improvement in Tarija, Bolivia

National Strategies

National Government acts as a facilitator to develop social policy through institutional strategies delegating action to executor entities in both departmental and local levels.

Government is legally restricted to a normative role to provide developing lines and guiding principles, which should be carry on by the decentralised and municipal administrations. The tendency to delegate functions and responsibilities to the Municipalities and to the private sector started few years ago and is becoming to be a regular process.

Based on the background considerations mentioned and in the main Chagas indicators, the Bolivian National authorities, specially from the health sector since 1990 have defined Chagas Disease a national priority of health intervention in both ways: prevention and vector control and providing medical treatment to those people who are infected.

The magnitude of the Chagas problem in Bolivia has estimulated the creation of an umbrella National Chagas Control Programme to co-ordinate the activities of all the actors involved in the implementation of institutional control strategies and co-ordinate with its similar organisations of Paraguay, Peru, Argentina and Brazil, and also to be official interlocutor to the international and interagential co-operation.

The health sector as the main governmental institution to lead with the Chagasic problem, can not carry on alone all the responsibility. The National Programme enables necessarily a partnership approach to link as much resources as possible, in terms of NGOs as executor entities.

The National Chagas Control Programme

This Programme depends of the Ministry of Health and Social Prevision. On the Strategic Health Plan against Poverty (1997-2002) it is mentioned the need of establishing an epidemiological barrier to fight against the vectorial and also the endemic diseases in the country such as Chagas, tuberculosis and malaria.

To carry on the National Chagas Control Programme, different resources have been linked and strengthen with a credit of 53 million of US Dollars from the Interamerican Development Bank; 24 million of them will be designed exclusively to fight against vector transmission for the next six years.

The National Chagas Control Programme has the mission to improve 85.000 houses in the six departments of the Chagasic Endemic Region. That means an average of 14.000 houses per year that represents only 50% of the total requirement.

The strategies for intervention considered in the National Chagas Control Programme could be summarised as follows:

- provide technique control services to the communities
- provide health education through stabilising a training system for different levels

- housing improvement
- spraying
- housing improvement plus spraying
- self-help system
- monitoring and evaluation through the health national, regional and local systems
- prevention services for children under five years old
- prevention programmes for pregnant women and mothers

The National Housing Subsidy Programme

This Programme depends of the Ministry of Housing and Basic Services.

The new policy for housing and basic services in Bolivia (1997-2002) focuses its efforts to improve quality of life of the population under an integrated concept of intervention. It also looks after reducing the homeless problem that presents huge deficit of housing units as much as deficit in housing quality.

The housing policy shows two main strategies for provision of housing: a) Secondary Market of Mortgage Titles for people that until now have not been able to get a credit in this way, and b) The National Housing Subsidy Programme as a mechanism to solve the housing demand of the low-income families.

The housing finance system has the following sources: 2% of the total salary amount as employers contribution, external credits, bilateral and multilateral donations, national resources, voluntary contribution of local administration from the municipalities and the remaining funds of old FONVIS. [4]

The Interamerican Development Bank is according a credit of 60 million US dollars to strengthen the housing policy; 48,1 million are expected to be spent in the National Housing Subsidy Programme on its five subprograms in the next six years.

The National Housing Subsidy Programme targets on housing improvement and access facilities for new units for people identified as low-income families in urban and rural areas.

The housing subsidy is an extraordinary amount from the state and its contributors to Bolivian families in order to improve their housing conditions.

The main objective of the National Housing Subsidy Programme is to improve living conditions of low-income population through a state subsidy to family's lack of housing.

The mechanisms for subsidies are subprogrammed as follows:

a) Collective financing for neighbourhood improvements providing basic infrastructure and property titles, or basic sanitation projects for small towns under 2000 people. Subsidy should go to the families through goods and services
b) Individual financing gives individual subsidy to acquire, build, enlarge or repairing a house.

The housing subsidy should not exceed the equivalent amount of US. 3.000 per family and it should not be applied to improvement or to buy a housing solution over US. 10.000.

Under the National Housing Subsidy Programme there have been designed five subprogrames to be considered:

a) prevention, help for natural risks and emergencies
b) housing improvement in endemic disease regions
c) neighbourhood improvement and regularisation of property tittles
d) provision of water and sanitation systems
e) direct subsidy to acquire a house

At this moment only a) and c) subprogrammes are being executed, the other ones are still under feasibility and regulation studies. Nevertheless it is important to note that housing improvement in endemic disease regions has been considered as a subprogramme in order to its importance specially for the Chagasic Region and gives a significant insight of the political volute to deal with the problem and to co-ordinate both sectors, health and housing.

Despite of the considered policy, the housing sector in Bolivia has a low political interest. And it certainly can be reflected in the national budget, where it does not have the same priority as education or health. There is still not a very clear definition of the homeless strategies in order to guarantee the subsiding subprogramme that shows limited funds to operate it.

The World Food Programme Country Programme

The most important agency of the United Nations to fight against hunger is the World Food Programme. In 1997 this agency provided food assistance to nearly 53 million people in the world in order to help in emergency situations, earthquakes, natural disasters, damages caused by wars and also for human development activities.

The purpose of the World Food Programme assistance in Bolivia is to:

- increase feeding security with higher levels of production
- promoting human development, especially for ethnic groups and women
- increase investment in technology, infrastructure, and micro industries
- fight against poverty providing more opportunities to generate income and employment

The target groups of the World Food Programme assistance are the poorest of the poor. The poorest families, especially women and children, ethnic groups, people under disease risks, especially in the rural areas.

The World Food Programme contribution to Country Programme in Bolivia between 1997 and 2002 is about 47.6 million dollars for three basic activities such as follows:

[4] FONVIS national institution created in1992 for formal low income housing delivery that has not been successful and is now under a liquidation process

BA1. Rural development with production activities credits infrastructure, basic services and protection

BA2. Public health services to reduce incidence of Chagas disease, through housing improvement with communitary participation under self-help systems and food for work as an income transfer.

BA3. Education with scholar feeding, pre-school and nursery integrated services, children in and of the streets, improving school and pre-school buildings and basic services.

In all theses activities the products of donation have only two kind of delivery possibilities, one is known as income transfer of food for work and delivered through popular committees organised in the communities. The other one delivers the products straight to the centres where children are going to have integrated services of health, education and feeding. Children do eat in situ prepared meals by popular participation designed persons.

There have been important debates about how food aid has either a positive or a negative impact into communitary organisation and participation. For many researches giving food to the people without any conditions, just as assistance has become into a controversial response to people initiatives. It seems as it influences deeply bad to the communitary organisation affecting the level of awareness gained through participation. For the World Food Programme running activities, food as income transfer seem to be a good experience in order that products delivered helped peoples participation. Programmed jobs in a determinate time have been reached and expected compensation with products rations that enabled its organisation, have been delivered under communitary control.

Non Governmental Organisations

A significant contribution to the need of Chagas Disease control in the private sector has been carried on by the intervention of several Non Governmental Organisations (NGOs). Those entities have been operating different projects in the Endemic Chagas Region for varying lengths of times and applying diverse interventions.

It is important to mention the participation of the NGOs, even when its financial contribution is not quite significant and many times its intervention is only at local levels and for specific activities. The positive evaluation of the NGOs shows that they work directly with the participants, often as technical advisors, help in legal topics and people do trust them rather than to institutional entities. They have stabilised important methods to facilitate people organisation, participation, capacity building and empowerment.

The following NGOs have been working in the Chagasic areas, most of them with housing improvement experiences and others:

a) The *CARITAS BOLIVIANA* project in Tarija,which was involved in housing improvement, education and insecticide spraying. *CARITAS* had limited funds to continue adequate housing improvements and the whole project became affiliated to *USAID Community Child Health (CCH).*

b) The *Cardenal Maurer* Project in Chuquisaca is a well operated broad-based district health programme that primarily gives basic health services. There has been stabilised a *Proyecto Britanico Chagas Control* component. When funds finished this component was also incorporated to the *CCH* project.

c) The *FIDA and WFP* agricultural development project in Tupiza had an ancillary program for Chagas control based largely on insectisides with some housing improvement and health education.

d) *PRO-HABITAT*, a national foundation for human settlement created by the United Nations and the Bolivian Government in 1993, which grew out of seven years of experience of the *UNCHS-HABITAT DANIDA Project*, training for community participation in human settlements and culminated in Habitat entrusting a group of workers with the ownership of the foundation. *PRO-HABITAT* has achieved regional joint ventures and partnerships between 30 public and private institutions. Each has inserted training and capacity building in their budgets. In Tarija *PRO-HABITAT* is developing participatory models to enable community management in housing improvement in the chagasic area.

e) *Community Child Health (CCH)* Project with *USAID* funds was initiated when there was not organised the National Chagas Control Programme and has done a very important experience, recognising the scale required for a national programme and the lack of knowledge about the disease and its control in Bolivia. This project concentrated its activities in developing through operational research and training the components that would be need in a national programme.

The objectives of the *CCH* project were defined in order to:

Develop and test economically feasible strategies to control Chagas disease, which included epidemiological assessment, housing improvements, health education and community mobilisation and vector control

To establish a model of which such strategies could be planned, coasted and implemented in affected areas when funds available

It was understood that those objectives could only be achieved within a framework of operational research (on insecticide and techniques of housing improvement) and training health promoters, local artisans and communities.

NGOs initiated small-scale Chagas control projects, but was not always well funded, organised and documented. Most were based on spraying with available insecticides. By other side research institutions and universities conduced specific studies and/or local diagnostics, but no control programmes.

Popular Participation

Popular participation at the local level is the most important strategy in the process of developing Chagas Control Programme. Local level is considered the basic

unit where the demand of housing improvement is generated and requested to the local administration of the Municipalities. It is the correct place where the real needs of the communities are discussed within the potentialities that the Popular Participation Law gives to the people through the mechanisms of Participative Planning.

The Bolivian Popular Participation Law is one of the most important institutional reforms made in the last times in the nation. It can be described as a programme for municipalisation with popular vigilance and provides a core budget to the Municipalities in the form of a 20 per cent share of the national taxes distributed in proportion to the local population and known as co-participation tributary.

For the first time in Bolivia through the Popular Participation Law significant resources have been placed under locally elected authorities in order to improve quality of life with a just distribution and better administration.

There is an important tradition of local participation in the rural areas and in different cultures of Bolivia, with a complex hierarchy of collective entities that have been for ever self based, decision makers, justice administrators, land collective working and also strong community control experienced. The popular participation has been recognised and regulated by the Popular Participation Law since April 1994. The popular entities such as peasant communities, indigenous people and neighbourhood council are now Territorial Base Organisations (TBS) and the authorities have jurisdiction over a given territory. The popular participation is assigned rights and duties. They develop control to the use of the municipal incomes. The OTBs are able to play a role in guiding and auditing the conduct of municipal government through the constituted Vigilance Committee.

The Municipal Government is responsible for social and other public investments in their territories or areas of jurisdiction. Municipalities are also expected to assume the main responsibility of decision making for social planning.

The country is divided into 320 Municipalities and the Chagas Disease Control Programme includes 158 Municipalities.

Proposal – Project: Complementing and Contributing to the National Chagas Control Programme

Introduction

Since 1964 the Bolivian Government has learnt to appreciate the strategic use of donated food specially to mobilise low-income people to reach a better quality of life. World Food Programme considers food assistance as an appropriated mechanism to link institutional and private efforts to control Chagas vector.

This project proposal will continue the old WFP */BOL 2801 Health Assistance with a Chagas Component* that has been supported with the World Food Programme funds. The new phase will start in October 1999 until September 2002 for three years with an amount of 5.0 million US dollar in products to be delivered as food for work under housing improvement self-help organised component.

The project will be located in the National Office for Donated Food Resources Administration with in a wide co-ordination with the National Chagas Disease Control Programme as the state facilitators for the process. Under the epidemiological barrier health strategy, this project will complement and contribute the National Chagas Control Programme to carry on the component of housing improvement with a self-help organised system where food for work will be used as an income transference.

Reviewing the Problem

The Chagas Disease reduces energy and productivity of infected person. The vector that transmits the disease is the *vinchuca* that lives in the defined endemic region mostly under poverty conditions. Poor housing constructions are the ideal habitat for the vector especially in rural areas, as it is reflected in the data that 60% of the territory is considered the endemic area and the prevalence of Chagas Disease is estimated in 40%. So the problem shows that Chagas vector is certainly related to housing construction quality

As far as the problem involves two main social sectors, health and housing, intersectorial co-ordination with control Chagas vector in the Bolivian Endemic Chagas Disease region.

Both sectors, health and housing involved directly into the Chagas Disease problem must agree the development of the main guide lines of a national and coordinated strategic focus. The consideration of designing a co-ordinated strategy will certainly take time before starting the activities and it has to be a political decision made at the highest level of the national government.

Health sector is carrying on the National Chagas Control Programme as a whole since its health services national structure constitutes an advantage that housing sector certainly does not have. The meaning of integrated

actions should show out what each sector capacity and specificity is able to do at best. As the problem considers the risk of death, loosing energy and productivity of infected persons it is certainly a health matter, and health sector should design the correspondent health indicators including prevention and treatment as an specific health problem to be solved.

For housing sector the intervention in the Chagas Disease Endemic Region constitutes a response to the National Housing Policy and Basic Services, where investments to improve housing quality are available for specific items.

Consequently, co-ordination is necessary understanding that health sector is guiding all its efforts to eliminate the disease in general, while housing sector will look after eliminating the *vinchucas* habitat particularly. So housing sector subprograms constitute an appropriated mechanism to reach final propose of health sector in order to eliminate the Chagas Disease in Bolivia.

Dimensions of sectorial interventions are shown as follows:

Health sector

BID Credit of 23 Million USD to support the National Chagas Control Programme for six years 1999 to 2005.

Intervention in six departments, 65 provinces and 158 Municipalities

85.000 housing improvement units expected

Housing sector

BID Credit of 48.1 Million USD to support the National Housing Subsidy Programme under

Five subprograms for the next six years 1999. to 2005

No decision made yet of how much will be assigned to the Housing Improvement in Affected Endemic Disease Areas and specifically for Chagas Disease.

No specific targets where the intervention should be priorized yet

No specification weather a subsidy for housing improvement should be consider for the endemic Chagas Disease region or not

National Office of Donated Food Resources Administration

World Food Programme donation of 5.0 Million USD for three years 1999 to 2002

Intervention in six departments, 25 provinces, 60 Municipalities

30.000 housing improvement units expected to be carry on under food for work mechanisms

The above considerations have been made in order to clarify that intersectorial co-ordination is essential to be successful with the quantitative goals of the National Programmes. But in order to be practical setting on a realistic position and considering that intervention should be done as soon as possible, the proposal will search for a modest and immediate intervention through the following project profile.

Objectives

Main Objective

The Project's ultimate objective is to contribute to reach the national challenge of eliminating the Chagas Disease in Bolivia

Immediate Objectives

To design and prove a housing improvement component

To establish before January 2000 the housing improvement component as a regular activity in the selected areas of intervention

Strategy

To achieve the set objectives the project will:

a) develop an specific package of the technical, financial and social organisation assistance
b) develop a training system for the main actors who will be engaged into the management and execution of the housing improvement component at regional, municipal and communitary levels
c) establish a net of Non Governmental Organisations to reinforce the local level to achieve the housing improvement process

Once the proposed packages are completely designed, proving works in a specific selected area should start in order to make all the necessary adjustments to continue with the goals.

Technical Package

Under a philosophic consideration the project will basically respect the cultural traditions of construction as well as the use of local building materials in order to reduce the improving costs. But in order to improve the final quality of the modest buildings the project will incorporate the use and supply of non-local building materials where needed under a basic credit system.

Housing improvement in the project means to correct major defects and construction damages as well as to organise better the whole housing space in order of designing specific functions.

Housing improvements will be conformed into a menu of possibilities in order to:

- repair any damage to foundations, floor and walls
- repair and/or replacement of covers, roofs, gutters and ceilings
- repair or enlarge windows and doors
- enlarge existing building to overcome crowding problems with either bedroom, kitchen or storage
- organise outside spaces that includes wet areas for kitchen and water activities, refuse solution, corrals for animals, ovens, protective walls and courtyards as a nuclear space
- provide basic services such as water taps where available an installation of pit latrine

Housing improvement also includes specific solutions for the three Eco-regions identified in the Chagas Area and the type of buildings due the local building material used on each.

Simple studies after interviewing the families must be done for each improving case establishing what families want to improve at best to suggest the technical and financial solutions the Executor Unit placed at the local level.

Organised Self-Help Housing Improvement

People have already done self-help activities as a tradition of surviving.

They know the know how of solidarity, collective and communitary intervention, the laws that regules the process of self-help, but the question here is to do it with quality. And that means that technical and financial assessments are certainly necessary. Housing improvement will continue the process that families have started when first built their houses.

Self-help for the project means that families will built the improvement items by themselves in order to reduce costs. Families will only pay for non-local building materials, the labour costs will be charged to themselves as well as local building materials.

This process even if it is done by traditional organisation, has to be accomplished with technical assistance, training and following methods to make the result efficient. An d of course following the process of the participative planning derived from the National Popular Participation Law.

Communities and families are the principal actors of this process. A communitary committee for the housing improvement process can represent a group of families or the Base Territorial Organizartion (OTB) itself. But it is necessary not to leave community alone, therefore there will be another actors incorporated. Those will be the technique promoters either of the Municipalities or from the Non Governmental Organisation (NGOs.) in charge of.

The steps established for the self-help process in the project are as follows:

Local Executor Unit (LEU) should have promoted the project in different communities. So any requirements of communities, groups of families or individual families should be addressed to the Local Executor Unit (LEU).

The Local Executor Unit will do technical evaluation to check feasability. After it an agreement should be signed establishing responsibilities, where families engage for local building materials, labour journals and requirement of a credit

Families will be trained in construction issues and financial solutions

Families will enter the programme of food for work during the improvement process with defined times, activities to be done and product delivery schemes.

Financial Aspects

To support the housing improvements there have been two alternatives to be considered:

The use of part of the BID credit to create an indirect subsidy as an emergency due the critical situation of health risk that Chagas represents. The subsidy should not be given as a monetary amount, but as a supply stock of non local building materials. As far as the decision must be done at the highest levels and it is not available by the moment, the project will use part of the World Food Programme monetized resources as a revolving fund or as an initial fund for non local building materials as a simple credit system, that people can pay monthly.

The project will establish a Building Material Bank that will act by demand.Its main function will be to facilitate selected beneficiaries the access to a credit solution for their housing improvement requirements.

The creation of a revolving fund will favour annual new groups of beneficiaries. Preliminary approaches to financial aspects shows that for an income of 60 US per month, families would be affordable to pay 12 US per month in two years. This amount will include a low interest and the cost of devaluation and risks for an average amount of 200 US for each housing improvement unit. Half the available funds for housing improvements of the project should be used for investment to generate interests, and the other half for the Building Material Bank itself in order to satisfy the demand of credits.

Requirements to the communities to access a credit are:

Families should have property titles of land

National identification card

Families should engage local building materials as far as labour journals.

Target Groups

The project identifies the poorest families of Chagas Disease Endemic Rural Areas in six departments in Bolivia.

30.000 families should be benefit with housing improvement interventions

Selection of the Intervention Sites

The main criteria to select intervention sites are considered as follows:

World Food Programme Country Programme already selected areas

High infestation rates areas

Willingness of the communities to participate in the housing improvement process

Physic accessibility conditions to grant monitoring and supply of non local building materials

Requirement and compromises of the corresponding Municipalities to apart with progressive budget including the process into the municipal annual operative plan (POA)

Experienced NGOs intervention in the site

Preferentially areas with some productive development possibilities

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