

Condo Chejuaya – Safe Drinking Water System
Prepared by Mallku Originario Santos Gonzales November 2009, received 30th November 2009

1. **Name of Project:** First Phase of the Implementation of a Drinking Water System in the community of Condo-Chejuaya.
2. **Location of Community:** Condo-Chejuaya is located in the Municipal Authority of Santiago de Callapa in the Province of Pacajes, Department La Paz, at an altitude of between 3,990 and 4,280 m. approximately 175 kms. from La Paz, a journey of 4 ½ hours, via the asphalted road from La Paz to Patacamaya and Tholar and then on a dirt road. Transit is difficult in the wet season. Pacajes is semi-arid with a temperate-cold climate marked by an annual average temperature of 6°C, a range between -8.92 °C and 20.91°C and precipitation of 386 mm. (113 mm falling in January, but less than 25 mm per month for eight months of the year). N.B. Data in the proposal is for the period 1990 to 1994 and therefore does not register more recent climatic changes on which there is only anecdotal information. For six months of the year there are frosts on over 15 nights a month; severe hailstorms occur on average six days p.a. between November and March; droughts are common from April to August but with increasing variability (see original proposal Sections 2.2.2 to 2.2.4 for more detail and statistics)
3. **No. of Participants:** 45 resident families directly plus 15 who visit occasionally.
4. **Partners:** Gobierno Municipal Santiago de Callapa (with funding)

5. Profile of community

Cultural and Social: There are 208 residents grouped into 45 resident families, and a projected growth rate of 1.3% p.a. (Census 2001). Currently there are more women (51%) than men, as the men have migrated for economic reasons. The age data reveals a markedly low percentage in the 20-40 years age bracket (only 14%). Aymara is spoken mainly. Land is communal and, since the 1952 reforms, in the hands of peasant farmers (although not fully registered by INRA). The community is wholly indigenous, organised under the Agrarian Syndicate (Central de Callapa) and represented by the Mallku, Sullka Mallku and Mama Thalla; leaders utilize traditional dress.

Economic: The economy is based on subsistence farming; no improved seeds are used. The main crop is potatoes, followed by canahua, barley and quinoa, and rotation is practiced over a 3-5 year cycle. Income is gained from the sale of livestock especially sheep and to a lesser degree cattle and camelids. Women spend approx. 63% of their time looking after the animals (compared with men 21%). The average income is about 300 Bs. a month (\$us 43). Food is particularly scarce from October to March.

Services: There is a state primary school with 2 teachers and 25 students; the building has neither water nor electricity. Attendance is good. There is no secondary school, or health post and the population travel to other communities, to the hospital in Patacamaya or to La Paz. Houses are mainly adobe with mud floors, although 70% (32 families) have corrugated metal roofs. There is no access to safe water – 84% of families use rivers and springs and 16% have dug basic wells. There are no latrines, the custom being to allow human waste to decompose naturally in the open ground. The disposal of rubbish is not controlled.

PADEM and Christian Children (school breakfasts) are active in the area.

6. Project Justification

Most of the communities in the Municipal Authority of Santiago Callapa have high indices of poverty and marginality due mainly to the climate, poor soils, lack of vegetation and lack of water. The latter also affects the health of young children who suffer from diarrhoea and parasites since water accessed from the rivers, streams and rustic wells is often contaminated and inadequately stored, leading to further contamination. The proposal is to bring good water a distance of 8.5 kms to the school where a public stand-pipe will be provided. At a later stage, it is hoped that further communal stand-pipes will be provided. The population will also use the water for their animals as necessary.

7. Project Description

- 7.1. **Initiation and planning:** The project was presented by the Mallku and Mama Thalla to the Municipal Authority which has approved part-funding in its 2009 POA.
- 7.2. **Project phases and programme:** Four months consisting of:-
 1. Organisation – through the formation of a Water Committee
 2. Survey using a topographer

3. Baseline socio-economic survey by FQBL staff.
4. Three educational Workshops – on health, hygiene and care of the environment.
5. Execution of works under supervision of master builder with cooperation of the project participants
4. Training
5. Final handover
6. Post-project: Visits to families at 3, 6 and 9 months periods after completion to measure impact.

7.3. **Training:** Training in maintenance, administration and operation of the system by FQBL-Bo; and on agreement of annual quota and its use. Teachers will be involved in educational workshops in the school where children will be given cleaning kits (towels, soap, toothpaste and brush);

7.4. **Anticipated Risks (from Log frame):** Stable political, social and economic conditions; active participation, including payments into the sustainability fund; no adverse environmental or climatic factors.

8. Project Budget

8.1. **Budget summary (in \$us)** Exchange Rate: 6.96

Item		Community	GM JM	QBL	Total Bs.	Total \$us
		\$us				
Pre-investment	Visits					
	Base line survey - 4 days			117.16	815.31	117.16
	Preparation of proposal			200.00	1,391.79	200.00
Admin. Costs	Administrative costs					0.00
Human Resources	Training - health, hygiene and baseline survey			350.20	2,437.00	350.20
	Training - maintenance, operation, statutes			244.29	1,700.00	244.29
	Labour (specialised / manual)	4,622.94		3,201.25		7,824.19
	TA and Monitoring FQBL (4 days/ mth)			750.00	5,219.21	750.00
Equipment & tools	Tools			500.72		500.72
Materials & Inputs	Inlet - spring	15.90		329.86		345.76
	Storage tank 6x6x2 m ³	66.81	1,231.82			1,298.63
	Ravine crosses	111.93		11,924.09		12,036.02
	Filter					
	Pressure break chamber	5.38		405.95		411.33
	Dirt exclusion chambers	3.23		222.96		226.19
	Air exclusion chambers	3.23		237.33		240.56
	Water analysis (2 samples)			20.12		20.12
	Adduction system 8700 ml.		10,079.76	1,294.39		11,374.15
	Plotting of plans			22.99		22.99
	Hydraulic test (8 kms)			600.00		600.00
	Training manuals			90.00		90.00
	Washing kits (soap, toothbrushes etc.)			894.60		894.60
Services & Transport	Topographical survey			617.10		617.10
	Transport and food			935.62		935.62
	Transport of material			1,436.78		1,436.78
Post-implementation	Consultant (evaluation of impact) - 4 days			140.00		140.00
	Impact report			200.00		200.00
Totals		4,829.42	11,311.58	24,735.41		40,876.41
%		12%	28%	61%		100%

		\$us	Bs.
UK contribution	less staff costs	22,733.76	158,202.99
	from central budget	2,001.65	13,929.35
Total QBL contribution		24,735.41	172,132.34
	QBL per flia	549.68	3,825.16
	total budget per flia	908.36	6,321.26

The QBL contribution per family is about £382.

8.2. Community input: Local contribution in form of excavation, local material amounting to only 12% of the budget. However, the GM Santiago de Callapa is providing \$us 11,312 for the construction of the storage tank and the main pipeline, representing a further 28% of the budget.

8.3. Materials/ design to be used: The design is complicated by the distance and topography to be covered and involves crossing 14 fissures with suspended pipeline using galvanised pipes supported by columns of reinforced concrete, cables and tensors. Main pipeline is PVC C-15 and E-40. See attached plans

9. Sustainability

Social: Three representatives elected in a meeting to form the water committee and guarantee the maintenance of the system. This Committee will last 12 months and then be re-elected.

Environmental: Neither the construction nor the tapping of an existing water source is expected to have significant environmental impact.

Technical: By taking part in the construction of the system members will learn how to maintain it.

Economic / financial: Through monthly payments into the maintenance fund, the amount fixed by the users.

10. Anticipated benefits of the project

- 45 families with access to safe water
- 80% efficient water supply
- 45 families educated in health, hygiene and care of their environment; 80% of these exhibiting lasting changes in habits after 9 months.
- 45 families trained in the maintenance and operation of the system
- a local Committee organised to manage and administer the system

11. Specific queries and comments (still to be sent to Lourdes on 4th December)

12. General Comments (PRR)

The community is located in one of the areas we have prioritised due to its higher poverty levels and less intervention by other organisations. Since the project has been approved by the GM for funding it has already had a degree of revision. It is however costly due to its technical complexity and for the same reason presents high risk in its execution. It will require careful supervision and possibly a longer construction period than that currently envisaged especially as works will commence in the rainy season. There is no costing for extending provision to further stand-pipes.

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