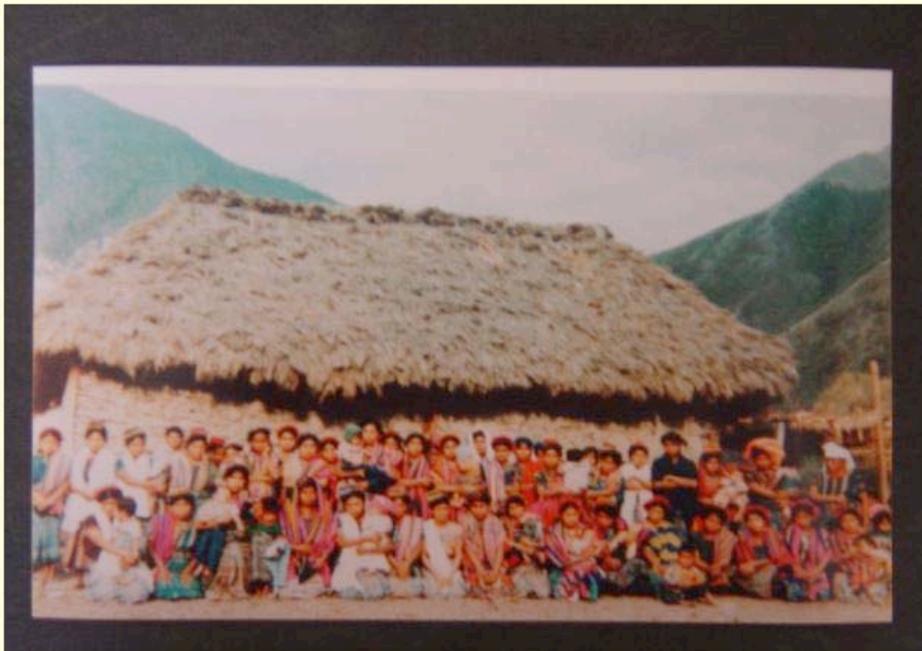


Volume 3: Chixoy Dam Legacy Issues Study

Consequential Damage Assessment of Chixoy River Basin Communities: Material Consequences of Dam Construction, Involuntary Displacement, and Damage and Loss of Critical Resources

Barbara Rose Johnston
Center for Political Ecology
March 17, 2005



Women of Río Negro, circa mid-1970s



Chixoy Dam Legacy Issues Study

An independent scientific assessment by the Center for Political Ecology commissioned by *Asociacion Campesina Río Negro 13 de Marzo Maya Achi* (ASCRA), International Rivers Network, Reform the World Bank-Italy, and Rights Action-Guatemala. Research and report production has been supported by grants from the Ford Foundation, Global Greengrants Fund, Grassroots International, Global Fund for Human Rights, Moriah Fund, Sigrid Rausing Trust, and the Swedish Society for Nature Conservation. Peer review of this work has been supported by a grant from the American Association for the Advancement of Science, Science and Human Rights Program, and the intellectual contributions of members of the Society for Applied Anthropology, American Anthropological Association, and the American Association for the Advancement of Science.

Published by:
Center for Political Ecology
P.O. Box 8467
Santa Cruz, California 95061 United States

The Chixoy Dam Legacy Issues Study may be freely duplicated or linked to for nonprofit research, advocacy, and education purposes.

Table of Contents	page
Introduction	2
Summary of Findings and their Major Consequences	3
Consequential Damage Assessment Methodology	6
Archival Research Goals	
Household Survey and Assessment Goals and Objectives	
Qualitative Research: Targeted Interviews	
Survey Sites	
Resettlement Communities	
Upstream and Downstream Communities	
Research Methods	
Survey Instrument	
Sample Size and Representation	
Research Support and the Fieldwork/Analysis Team	
Key Indicators	
Validity of Data	
Survey Findings: Tables 1-18	12
Peer Review Findings	29
Santa Fe Group on Reparations and Development Statement on Chixoy	
Attachment A: Qualitative Research Interview Summaries	32
1. Downstream experiences with the Dam: Agua Blanca Community	
2. Upstream experiences with the Dam: Pajales Quiché	
3. Militarized Life in Pacux	
4. Problems of the youth: experiences in Pacux	
5. Migration and its effects on household life	
6. On Life Today	
Attachment B: Household Survey Instrument	48
References	56

Introduction

Volume Three of the Chixoy Dam Legacy Issues Study presents findings from research documenting the pre-existing way of life; compares access to critical resources before the dam and in the present time; and, examines some of the consequential damages experienced by communities whose lives, lands, and livelihoods were taken without respect for fundamental rights. Studies were designed to

- (1) Generate quantitative evidence that confirms, contextualizes, or discounts the allegations and claims contained in the published and documentary record;
- (2) Assess this evidence in comparative fashion, allowing recognition of how Chixoy River Basin community experiences and current conditions differ from other rural Mayan communities; and,
- (3) Identify specific consequential damages that can be directly or indirectly attributed as a consequence of the failures and flaws in dam construction, planning, and social program implementation.

This report includes a summary of major findings and their consequences, descriptions of research methodology, survey sites, detailed presentation of survey data, summary of ethnographic interviews, references, and copies of the survey instrument.

Beginning in April 2003, archival research examined the published literature and project documents that describe the Chixoy River Basin population, residential setting, housing conditions, and critical resources existing at the time initial feasibility studies were conducted (1973-1974). Document review and consultations with other anthropologists who work with Mayan communities allowed the development of a survey instrument assessing the resources used to sustain the pre-dam way of life, changes in access and use of these resources, and the consequential damages associated with these changes. The survey instrument was reviewed, refined and translated into Spanish, and in May and June 2004, a household survey was conducted in Maya Achi and recorded in Achi and Spanish on Spanish language forms. (See Volume 3: Attachment B for a copy of the survey questionnaire).

The survey instrument assesses pre-dam (circa 1975) and current household conditions and resources for a representative sample of the affected population including households physically displaced by the construction of the dam and its reservoir, and, upstream and downstream residents who suffered the loss of land and property and/or decreased access to and use of critical resources as a result of the project construction and operation of the hydroelectric facility. The survey population consists of 182 households living in seven communities adversely affected by the construction of the Pueblo Viejo-Quixal Dam on the Chixoy River in Alta and Baja Verapaz, Guatemala. Four of these communities were officially recognized as “affected” and reside in resettlement villages. The other three communities were excluded from compensation and other remediation programs: two are located upstream, and one is downstream from the dam.

In addition to the household survey, ethnographic research and a series of key informant interviews generated additional data on sociocultural, economic, political and psychological conditions and experiences that are perceived to be directly or indirectly related to the

construction of the Chixoy Dam. Summary testimony from these interviews are found in Volume 3: Attachment A.

A draft version of this report was distributed in October 2004 to colleagues and professional organizations for peer review. Findings from this preliminary review were used to draft the *Santa Fe Group Statement on Chixoy*, a statement endorsed by the American Association for the Advancement of Science (AAAS) Science and Human Rights Program, AAAS Committee on Scientific Freedom and Responsibility; American Anthropological Association Committee for Human Rights, and the Society for Applied Anthropology (see Santa Fe Group Statement, at the end of this report).

Summary of major findings and their consequences

- Evidence obtained through ethnographic interviews, review of the document record, and consequential damage assessment demonstrates that the “directly-affected population” (people physically displaced by the construction of the dam and its reservoir) is significantly larger than presently or historically recognized by Instituto Nacional de Electrificación (INDE) and project financiers. Some families displaced by the dam were excluded from the initial census. Other displaced families were disenfranchised by INDE census in the years following the Rio Negro massacres.
- Evidence obtained through ethnographic interviews, review of the document record, and consequential damage assessment demonstrates that the total affected population is significantly larger than presently or historically recognized. Downstream and upstream communities were visited by resettlement officers on a number of occasions and promised compensatory actions for damages relating to the construction of the dam. Massacres and related violence halted resettlement officer visits, and no compensation documents were prepared as promised. As reservoir waters rose and dam operation problems emerged, communities saw the loss of land and property but were discouraged from submitting claims with threats of violence, including threat of massacre as endured by the residents of Rio Negro. The scale of the total affected community at the time that the dam was first completed is suggested in the August 1983 petition signed by 490 indigenous leaders representing over 6,000 families. This petition was presented to the President of the Republic by the members of the *Junta Directiva de la Comunidad Indigena* at Los Pajales and the Directors of the Local Committees for Reconstruction of towns and villages in the *municipios* of Cubulco and Rabinal.
- In cases where replacement land was provided to displaced communities, compensation was grossly inadequate. In 2004, some 97% of surveyed households reported farmland holdings totaling some 1170 *manzanas*¹ before the dam (circa 1975), while current use rights total some 235 *manzanas*. Only 5 households reported no rights to farmland before the dam, while 27 households report no rights today.

¹ Measurement of land: 1 manzana = 0.7 hectares.

- Displacement, loss of critical resources, and failures to provide the means to restore and improve the pre-existing way of life has had a devastating effect on the household economy of displaced communities, as well as those remaining in the Chixoy River Basin. Before the dam, household production provided all food needs for 79% of the total survey population. Today, household production sustains the food needs for only 28% of the survey population.
- In the resettlement communities (people displaced from the fertile river valleys of the Chixoy Basin), deterioration of household production is even greater, with 93% of the 119 surveyed households in the resettlement communities reporting the ability to provide all household food needs before the dam, and only 26% reporting this ability today. The declining ability to produce food is directly related to the loss of productive agricultural land, loss of pasture, loss of access to viable river and forest resources, and the move for many of the survey population from traditional lands and settlements to an urbanized “resettlement” village where productive lands are scarce and when provided, are located at great distance from the home.
- Accompanying the loss of the means to produce food for the household has been a dramatic decline in dietary protein. Households reporting regular consumption of fish several times each week dropped from 74% to 23%. The consumption of meat several times each week dropped from 30% to 21%. Some 82% of the population raised pigs before the dam, while today only 26% of the households have the household space to raise pigs. Before the dam 96% of the survey population reported keeping an average of 34 poultry per household. Today, only 69% reported the ability to keep poultry, and the average has dropped to 14 per household. Access to milk and other dairy products has also significantly declined as evidence by a change in the ability to keep and feed dairy cows, with 70% of the households reporting ownership of 1115 cows before the dam, and 21% reporting ownership of 121 cows today. These changes affect individual and family health, and are a likely contributing factor to the region's extraordinarily high rates of malnutrition and infant mortality.
- The loss of the means to sustain household needs – access to fertile lands, pasture, river and forest resources – also affect household ability to generate monetary income. Surplus production and sale in the marketplace of garden products, chickens, eggs and other livestock dropped from 44% to 12%. The number of households who caught and sold fish dropped from 49% to 03%. The number of households producing surplus crops on their farmland (*milpa*) to sell in the marketplace changed from 37% to 07%. And, the number of households involved in the harvest and sell of forest products also changed: collection and sell of palm leaves dropped from 81% to 32%, ocote torches from 56% to 02%, firewood from 29% to 11%, and construction timber from 25% to 01%.
- The inability to produce sufficient food and income from locally available resources has forced more people to leave home in search of work, and more families to rely upon remittances from an absent parent. Before the dam, Chixoy River Basin communities saw migrant farm labor was an income generation strategy to be used occasionally in times of great stress, with entire families traveling to work on distant *fincas*. Some 54%

of households reported leaving home for part of the year with their family to work on distant farms before the dam as an occasional, rather than annual, income generation strategy. Today 43% of the households report income from migrant work on distant *fincas*, however this is a regular rather than occasional income generation strategy, with the male head of household gone for part or all of every year. In the past, only 2% reported leaving home to work in wage/labor jobs in the city. Today, 29% of the households report income from one or more adult who lives and works year round in the city. This income generation strategy relies on the labor of the individual, fractures the family and the community, and has had profound consequences in the social dynamics of the family and the reproduction of cultural norms and traditions.

- Conditions for families living in resettlement villages, *if* measured by access to basic infrastructure, appears to be better than the national rural average reported in 2003. Electrical hookups are present in 97 of the 119 homes surveyed, suggesting a rate of 81.5% (compared to 56% of the rural households nationally). Piped water in the home or yard is found in 77 of the 119 homes, suggesting 64.7% of the households have water (compared to 54% of the rural households nationally). **However**, water is not regularly provided through the pipes, often requires additional payments, and in some villages, requires electricity to power the pump to deliver water. Lacking the money to pay the bills, people go without power and water. Thus, while only 9 families reported times before the dam when no water was available to drink or use for household needs, today 107 of the 119 resettlement village households (90%) report such scarcity.
- Two communities upstream and one community downstream from the Chixoy Dam were surveyed. Water is obtained river, spring, or well, and is not treated. There is no electricity. Other than home-built latrines, none of these communities have sanitation treatment systems.
- Resettlement village construction included a school, community hall, churches, and a health center. However, promised staff and supplies for the school and health center were only provided by INDE for a couple of years in the 1980s. While a number of Guatemalan Government programs support education and health services elsewhere in the region, such programs are typically absent in resettlement communities. Thus, while 58% of rural households have children who benefit from national school food programs, only 31.5% of the households with school age children living in resettlement villages report access to subsidized meal programs.
- Resettlement village housing is crowded, crumbling, and does not allow for any expansion of the population over time. Homes in the resettlement villages are typically single-roomed homes on an urbanized grid, with little room to garden, grow trees, or keep poultry and other livestock, and no room to expand or build outbuildings to support an extended family. Resettlement village households reported a pre-dam household that averaged 6 people living in household compounds where over 90% of the population had space around the home to garden, grow fruit trees, keep livestock. Today, these households contain an average of 7.5 people per home -- averages that discount the realities of households only one or two people who are the survivors of massacre, and

households of ten or more people representing two, three and even four generations who share a single room home.

In sum, consequential damage assessment of pre-existing conditions and current access to critical resources demonstrates that the people living in this part of the Chixoy River Basin not only had the means to survive, but also clearly enjoyed the means to thrive. At the time of initial project construction, in the 1970s, land rights were secure, and communal rights in many cases dated back to the 1800s. Communities lived in the same region where their ancestors lived. Fertile river basin lands provided a biannual harvest, fish was plentiful and available year round, communal lands supported livestock and harvesting of palms and other resources used to make trade goods. The sociocultural fabric of life was tightly woven across a landscape maintained by trade, familial ties, cultural beliefs, and historical relationships. Ancient trade routes connected the area to the highlands. And, the remains of past civilizations were vibrant and alive family histories and community cosmology.

Today, people who lived in a largely self-sustaining economy now struggle under severe conditions, where more and more of the essentials for life require Quetzales. Money is needed to buy water, power, firewood, commercial fertilizer, household food, clothing, school fees and supplies, land taxes, roofing and other materials to repair crumbling homes and community halls. Money is needed to travel to distant farmlands. Money is needed to pay for the time and assistance of lawyers and others who help prepare claims to secure long-promised compensation and other entitlements. And, people now lack access to the critical resources that once supported household and community income generation.

The privatization of INDE in the late 1990s resulted in the closure of INDE's Resettlement Office and the effective loss of any viable complaint mechanism for dam-affected communities. Existing social and economic obligations were not met when privatization occurred. The failure to meet these obligations contributes to current socioeconomic and political crises.

Consequential Damage Assessment Methodology

Archival Research Goals

- Review published and documentary literature to establish a pre-dam ethnographic context in the Chixoy River Basin, and comparative contexts for rural Mayan communities.
- Review census and material resource surveys developed as part of the Chixoy feasibility studies, resettlement and compensation program planning, and post-project evaluations, and compare and contrast these findings with other documentary resources (community narratives, national census, other project consultant reports and publications).
- Review Mayan community ethnographies and rural poverty documents to establish comparative contexts to interpret quantitative and qualitative research findings.

Household Survey and Assessment Goals and Objectives

- Develop quantifiable data assessing changes in the basic resources that support household production.
- Develop quantifiable data on land and basic infrastructure allowing broader comparisons to national reported figures, other community-specific case studies, and comparable rural Mayan communities.
- Develop qualitative information that allows contextualization of Chixoy River Basin community experiences and conditions.
- Identify the range of pre-dam resources that sustained household production.
- Assess current socioeconomic conditions as reflected in household resources, subsistence activities, and basic infrastructure.
- Identify consequential damages resulting from the loss of land and critical resources for displaced and indirectly affected communities.
- Identify dam-related losses and current conditions experienced by downstream and upstream communities excluded from compensation and resettlement programs.
- Assess conditions in pre-dam and current households relative to conditions in adjacent and distant rural Mayan communities.

Qualitative Research: Targeted Interviews

In addition to structured interviews using the household survey questionnaire, a series of targeted interviews were conducted (interviews in Achi, recorded on cassette tapes and written notes at the time of interview). Interview topics included transmission of traditional resource knowledge, sacred sites, conditions and damages related to the dam in downstream communities, conditions and damages related to the dam in upstream communities, social problems and concerns in resettlement communities, and life in a militarized village. Findings are summarized and included in Volume 3: Attachment A.

Survey Sites

In May and June 2004 household surveys were conducted in seven communities whose residents were adversely affected by the construction of the Pueblo Viejo-Quixal Dam on the Chixoy River in Alta and Baja Verapaz, Guatemala. The survey instrument assessed pre-dam (circa 1976) and current household conditions and resources for a representative sample of the affected population including (1) households physically displaced by the construction of the dam and its reservoir, and, (2) upstream and downstream residents who suffered the loss of land and property and/or decreased access to and use of critical resources as a result of the project construction and operation of the hydroelectric facility.

Resettlement Communities

Pacux, where forcibly displaced residents of **Río Negro** and nearby settlements live in a resettlement built by INDE to function as a military controlled “model” village. Guatemala Army occupation began with site construction and lasted until December 2003. Some 230 families live in Pacux in 150 houses. The survey sampled 47 households, including one family who originally lived in **Agua Fria**, and two families who, with eleven other families, recently returned to Río Negro to live and farm on communal lands above the reservoir. Residents of Pacux, as well as residents of the new Río Negro community also participated in

65 dam-affected households live in Chirramos, and 22 of these households were included in this survey.

Los Pajales, Quiche, is an upstream community with similar size and cultural characteristics of the pre-dam community of Rio Negro. Further upstream and isolated from roads, Los Pajales residents experienced no violence or major disruption during the civil war, though our sample included one surviving household from the **Agua Fria** massacre who later settled in Los Pajales. A portion of Los Pajales communal land extends to the banks of the Chixoy River and is now submerged by the reservoir. Los Pajales residents were not included in any compensatory program. Household Survey investigators visited Los Pajales in June 2004 to obtain comparative ethnographic data. Once investigators realized that it was actually an affected community, a meeting was held and a number of households volunteered to participate in the survey. An estimated 200 households live in Los Pajales, and the survey sampled 14 households. Additional detail on this community is also contained in interview summaries in Attachment A.

Agua Blanca is a downstream community where residents experienced property damage and related injuries but were excluded from compensation or resettlement programs. Residents of Agua Blanca had been forced to move numerous times as a result of dam construction activities, and they again face a forced resettlement to make way for nickel mining. Unlike many other dam-affected communities, the residents of Agua Blanca have no recognized rights to communal land, and farm on land rented from a patron. A total of 52 households live in Agua Blanca and this survey assessed conditions in 20 of these households. Agua Blanca residents also participated in history and needs assessment project, and their narrative report is found in Volume 4. Additional detail on Agua Blanca conditions and problems is included in the interview summaries in Attachment A.

Research Methods

A two-pronged approach to field work was used: the administration of a household questionnaire, and structured and nonstructured interviews with key informants. Both research strategies explored pre-dam and current conditions with the goal of obtaining quantitative and qualitative data from households in representative communities in four broad categories: households that participated in a resettlement program before the reservoir was filled, households unable to successfully negotiate a resettlement agreement, households that participated in a resettlement program well after the reservoir was filled, and, households not recognized as "dam-affected" and completely excluded from resettlement programs and related assistance.

The conceptual approach, research agenda, field methods and techniques were developed with the active participation and collaboration of community leaders, elders, and other cultural experts. Participatory research was developed in accordance to social assessment standards and professional norms (Burdge 2004a,b; Cernea and McDowell 2000; EPA 2000; Erwin 2000; World Commission on Dams 2000), indigenous consultation and public participation guidelines (EPA 2000), and professional codes of ethical conduct (Code of Ethics of the American Anthropological Association 1998; Society for Applied Anthropology "Ethical and Professional Responsibilities").

Survey Instrument

The survey instrument was an adaptation of the resource relations/consequential damage/community needs assessment strategy used in Marshall Islands Nuclear Claims Tribunal proceedings (Johnston and Barker 1999, 2001) that used participatory ethnographic methods and documentary resources to: (a) identify the key variables that sustained a previously self-sufficient way of life by examining traditional patterns of resource value, access, use and control; (b) identify key events and conditions that adversely impact these resource relations, and thus altered or destroyed their ability to be self-sufficient; (c) document the broad array social, cultural, and biophysical damages associated with these events and conditions, and (d) assess the socioeconomic consequences of these changes.²

To modify the resource relations/consequential damage/community needs assessment tool to fit the needs of the Chixoy Dam Legacy Issue study, key variables, data categories, and specific questions were developed in consultation with anthropologist Linda Green following a review of the relevant literature (Camarack 1988, CEH 1999, Cernea and McDowell 2000, Dill 2004, Green 1999, Goodland and Pollard 1974, Levy 2002, Manz 2004, Montejo 1987, Partridge 1983, Robinson 2003, Sanford 2003, Tecu Osorio 2002, World Bank 2003).

Sample Size and Representation

A total of 182 surveys were completed. Three responses were set aside as information was obtained from “non-affected” households (as defined by respondents). Findings reported here reflect a maximum total sample population of 179 households. In several instances total sample was further reduced to 177, reflecting removal of responses from two households in Pacux whose current conditions pertain to life in *Nuevo Río Negro*, a settlement created in recent years by families who had returned to work Río Negro communal land and live on the hillsides above the reservoir. In a number of instances total sample varies to reflect the total number of respondents to a particular question or set of questions.

Survey sampling goals included completion of the 179-question form by a minimum of ten percent of the total population in each target community, and limiting survey participation to only those households whose members were displaced, suffered loss of property and other injuries, or were otherwise adversely affected by dam construction and operation. Survey population data reported in Table 1 illustrate that, in all cases, this goal was met or exceeded.

Research Support and the Fieldwork/Analysis Team

The household survey was conducted as part of a broader research program initiated at the request of dam-affected communities following a July 2003 meeting in the resettlement

² Consequential damage/community needs assessment in the Marshall Islands was developed in collaboration with Marshallese cultural experts who helped define key variables, identify key informants, and review study outcomes. Research documents past problems and grievances, as well as future needs and visions. Study goals, methods and outcomes were presented in a series of community meetings. Members of the community assisted with informant interviews. Household surveys were conducted and contextualized with structured and unstructured ethnographic interviews. Informant testimony was substantiated and supported by evidentiary materials largely found in the declassified record of scientific study occurring over a fifty-year period. The resulting expert witness report documented the consequential damages of involuntary resettlement and loss of lands, health, and a way of life in ways that reflected a Marshallese sense of injury, cumulative and persistent threats, needs, and meaningful remedy (Johnston and Barker 1999, 2001).

community of Pacux, Rabinal, Baja Verapaz. At this meeting, representatives from 15 dam affected communities met with NGO advocates to discuss community needs and a research strategy to document Chixoy Dam legacy issues. An *Acta* -- a formal record of discussion and agreements -- was drafted and signed by all participants and a plan for collaborative participatory research was approved. The plan called for research initiatives that document abuses, identify and assess consequential damages, and identify and prioritize community needs. Documentation was developed as a means to encourage and structure reparations negotiations between the affected communities and responsible actors. This research plan and its objectives was reported to World Bank and Inter-American Development Bank Staff, the United Nations Special Rapporteur for Indigenous Populations, Guatemalan agencies and NGOs, and the NGO and academic communities (Aguirre 2004; Aguirre et al, 2004; Johnston 2004, 2003a,b).

The community costs of hosting and participating in consequential damage/community needs research, and the technical assistance costs of translators, investigators, researchers, legal analysts and scientists were met with the assistance of Rights Action-Guatemala, International Rivers Network, Reform the World Bank-Italy, and the Center for Political Ecology. This ad-hoc coalition solicited funds from private foundations to support the independent scientific assessment of the consequential damages of the Chixoy Dam. Foundation grants supporting collaborative and participatory fieldwork, analysis, and report production were provided by Grassroots International, Global Fund for Human Rights, Moriah Fund, The Sigrid Rausing Fund, and the Swedish Society for Nature Conservation. The American Association for the Advancement of Science (AAAS) Science and Human Rights Program, with support from the Goldman Fund, helped subsidize the costs of a two-day peer review workshop that explored preliminary findings. Technical support in this research was also generously provided by a great many colleagues.³

Surveys were carried out with the assistance of nine community investigators with literacy skills who had completed a four-month training program, Maya/Spanish translators, three project researchers, and a field study coordinator who lives and works in the dam-affected community. Household survey questions were written in Spanish and verbally translated in Maya Achi. All questions produced a categorical or yes/no answer, and most questions allowed inclusion of additional information. When additional information was given, answers were recorded in Spanish and Maya Achi, and later translated into Spanish and then English.

³ Iñiqui Aguirre served as Project Coordinator for the dam-affected community history and needs assessment research. Rolando Cujá trained community investigators and worked with them while administering the survey. Bert Janssens served as Coordinator for the Household Survey and Janssens and Elisabeth Biesemans conducted ethnographic interviews. Barbara Lynch translated and summarized many of the Spanish-language development documents. Monti Aguirre translated reports and communiqués, conducted archival research in Guatemala, and Monti Aguirre and Annie Bird helped facilitate the household survey workshops. Rights Action intern Stephanie Molinari and Advocacy Project intern Carmen Morales developed maps and helped update the census of dam-affected communities. Ethnographic maps prepared by community representatives at the July 2003 meeting were entered into a GIS system by Nathan Hendricks and Brian Fulfroft, UCSC. Ethnographic interview and household survey questions were developed with input from Linda Green, Beatriz Manz and Bert Janssens; survey questions were translated from English to Spanish by Ben Edwards and Monti Aguirre, and translated from Spanish to Maya Achi by Bert Janssens. Bert Janssens, Elisabeth Biesemans, Rolando Cujá, Carmen Morales, and Monti Aguirre took digital photos of interview sites, local conditions, and reproduced historic photos of the original community settlements.

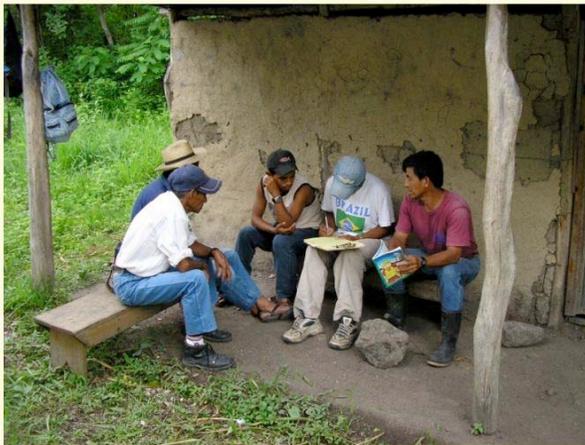
Key Indicators

A sample survey form is attached to this report. Survey content was divided into two parts: pre-dam and current conditions. Each part included 57 parallel questions, with an additional 7 questions added in “current conditions” to allow comparison of basic infrastructure to national rates. Key indicators include household demographics, housing conditions, household resources, patterns of access and use of river and forest resources, access to land and agricultural productivity, production of surplus and the ability to participate in the market, other income generating strategies, and access to potable water, electricity, sanitation, and telephone.

Validity of Data

Data from the pre-dam survey reflect informant memories of conditions, property, access rights and use of key resources. To strengthen the legitimacy of informant accounts, an effort was made to crosscheck accounts wherever possible with documentary resources. A significant portion of the household survey sample participated in a census conducted by Gustavo Adolfo Gaítan Sanchez and his research team in four visits between October 1977 and February 1978 (Gaítan 1979). That census reports family names, household size, number of structures in the household compound, size of farm land, number and kinds of domesticated animals, agricultural product, and market participation for fourteen communities living on the river banks upstream of the Pueblo Viejo-Quixal Dam site. As indicated in Table 1, residents from nine of the communities in Gaítan’s census were included in the 2004 survey and 137 “pre-dam” households -- 75% of the sample-- can be located and portions of their account cross-checked with details in Gaítan’s census.

Survey Findings: Household Survey Data (Tables 1-18)



Findings from the household survey are presented in Tables 1-18 demonstrating pre-dam and current conditions and resources. Each table presents results for thematic elements in the survey: household demographics, material resources around the home, access and use of forest resources, access and use of river resources, access and use of agricultural land, ability to sustain household food needs, production of surplus and marketplace participation, and access to basic infrastructure.

Table 1 – Household Demographics

Residence in 1970	families 1978 cited in Gaítan*	families in this survey	# people in this survey	# generations living in each household				
				one	two	three	four	five
El Zapote	7	5	37	0	0	3	2	0
Puento Viejo	20	15	72	0	4	10	1	0
Agua Blanca	-	20	124	3	8	9	0	0
Agua Fria	-	2	9	1	0	0	1	0
Pajales	-	15	78	3	5	6	1	0
Rio Negro**	124	46	274	0	26	16	4	0
Chirramos	51	25	152	3	13	9	0	0
Cawinal/Rio Blanco	-	8	44	1	4	3	0	0
Guaxnep	11	3	24	0	1	2	0	0
Panxit	12	1	7	0	1	0	0	0
Chicruz	87	31	203	2	20	8	1	0
Chitomax	33	2	16	0	2	0	0	0
San Juan Las Vegas	11	6	45	0	3	2	1	0
Total THEN		179	1085	13	87	68	11	0

*Household data for 1978 reported in “*Las Comunidades de la Cuenca del Rio Negro o Chixoy: Resultados de la encuesta socioeconomica levantada en parajes, caerios, fincas y aldeas donde se construye el embalse de la hidroelectrica del Proyecto Pueblo Viejo-Quixal*” by Dr. Gustavo Adolfo Gaítan Sanchez. Comité de Reconstrucción Nacional, Guatemala, Febrero de 1978. (Gaítan 1979).

** Includes households from Canchun and Los Encuentros.

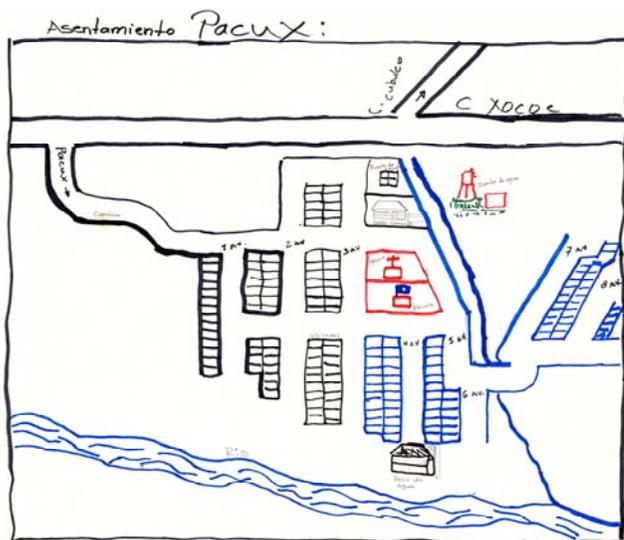
Residence in 2004	Estimated total number households	Total households in this survey	# people in this survey	Current # of generations living in each household				
				one	two	three	four	five
Rosario Italia: Resettled from El Zapote and Puento Viejo	90	20	108	0	3	9	4	4
Agua Blanca	52	20	116	2	11	7	0	0
Pajales	106	16	110	1	4	10	1	0
Pacux Resettled – Rio Negro	230	45	299	4	16	21	4	0
New Rio Negro: families who left Pacux and moved back to land above the reservoir	13	2	13	0	0	2	0	0
Chirramos: Resettled to higher ground in Chirramos	77	22	146	4	5	11	2	0
El Naranjo - Resettled from Chitomax, Chicruz, Panxit, Guaxnep, Cawinal, Rio Blanco, Chirramos, San Juan Las Vegas	300+	46	370	0	10	30	5	1
Chicuxtín - Resettled San Juan las Vegas, Cawinal, Rio Blanco, Chicruz, Chitomax)	75	8	73	0	0	6	2	0
Total NOW	943+	179	1225	11	51	94	18	5

Table 2								
Resources around the home								
Pre-dam	Kitchen garden	Basket material	Pottery clay	Roof thatch	Firewood	Poultry	Cows	Pigs
El Zapote Total surveyed=5	4	0	0	3	5	255	42	23
Puerto Viejo, Santa Cruz T=15	14	0	1	14	14	635	83	64
Agua Blanca T=20	10	0	4	5	14	469	39	11
Agua Fria T=2	1	0	0	2	2	89	9	32
Pajales T=16	4	0	9	15	15	207	36	44
Rio Negro T=46	44	0	0	44	43	1168	371	103
Chiramos T=25	9	0	22	0	20	671	78	116
Cawinal/RioBlanco T=8	8	2	5	5	5	367	65	46
Guaxnep T=3	2	2	2	2	2	182	33	20
Panxit T=1	1	1	1	1	1	80	38	5
Chicruz T=31	23	3	8	11	15	1102	201	138
Chitomax T=2	2	0	0	0	0	57	4	5
San Juan Las Vegas T=6	5	0	3	4	6	459	86	39
Total THEN	127	8	55	106	142	5750	1115	615
Residence in 2004	Garden	Baskets	Pottery	Thatch	Firewood	Poultry	Cows	Pigs
Rosaria Italia Total surveyed=20	20	0	0	0	10	345	3	2
Agua Blanca T=20	15	0	1	8	17	332	16	22
Pajales T=16	3	0	5	11	8	91	25	34
Pacux T=45	13	0	4	0	13	212	9	28
New Rio Negro T=2	2	0	0	2	2	51	0	1
Chiramos T=22	5	0	19	2	6	320	55	85
El Naranjo T=46	12	0	0	0	0	397	13	7
Chicuxtin T=8	0	0	0	0	0	29	0	3
Total NOW	70	0	29	23*	56*	1777	121	182
*For family use only								

Table 3											
Household production of poultry, livestock, and other animals											
Residence in 1970	Chicken <i>gallina</i>	Turkey <i>chuntos chompipes</i>	Duck <i>pato</i>	Pigs <i>cerdo</i>	Goats <i>cabra</i>	Cow <i>vaca</i>	Donkey <i>burro</i>	Horse <i>caballos</i>	Rabbit <i>conejo</i>	Cat <i>gato</i>	Dog <i>perro</i>
El Zapote Total survey= 5	139	56	60	23	2	42	0	8	0	0	38
Puento Viejo Santa Cruz T=15	400	118	117	64	4	83	0	7	0	6	53
Agua Blanca T=20	418	49	2	11	0	39	0	3	40	0	10
Pajales T=15	175	28	4	36	0	44	0	3	0	0	6
Agua Fria T=2	72	16	1	9	5	32	0	7	0	0	3
Rio Negro T=46	977	119	72	103	0	371	1	41	0	0	21
Chiramos T=25	605	43	23	116	7	78	0	32	0	0	1
Cawinal/ Rio Blanco T=8	240	86	41	46	7	65	0	12	0	6	17
Guaxnep T=3	141	26	15	20	0	33	0	11	0	4	8
Panxit T=1	36	20	24	5	3	38	0	6	0	2	5
Chicruz T=31	876	133	93	138	35	201	0	93	0	12	66
Chitomax T=2	42	15	0	5	5	4	0	6	0	2	4
San Juan Las Vegas T=6	315	108	36	39	29	86	0	20	0	0	23
Total THEN	4435	817	498	615	97	1115	1	249	40	34	255
Residence in 2004	Gallina	Chuntos Chompipes	Patos	Cerdo	Cabra	Vaca	Burro	Caballos	Conejo	Gato	Perro
Rosaria Italia Total survey=20	267	16	62	2	0	3	0	0	0	5	39
Agua Blanca T=20	294	36	2	22	0	16	0	0	0	1	20
Pajales T=16	70	18	3	34	0	25	0	6	0	1	11
Pacux T=45	176	8	28	28	2	9	0	1	0	0	29
New Rio Negro T=2	51	0	0	1	0	0	0	0	0	0	0
Chiramos T=22	307	9	4	85	0	55	0	29	0	0	0
El Naranjo T=46	267	22	108	7	0	13	0	2	11	16	29
Chicuxtín T=8	29	0	0	3	0	0	0	0	0	0	0
Total NOW	1461	109	207	185	2	121	0	38	11	23	128

Table 4
Housing Conditions – Comparing Urbanized Resettlement Communities and Traditional Settlements in the Dam-Affected Population

Residential density		Resettlement communities				Upstream	Down	
		Italia	Pacux	El Naranjo	Chicuxtán	Pajales	Chirramos	AguaBlanca
THEN		109/20 5.5	274/45 6.1	309/46 6.7	40/8 5.0	85/16 5.3	152/22 6.9	124/20 6.2
NOW		108/20 5.5	299/45 6.5	370/46 8.0	73/8 9.2	110/16 6.9	146/22 6.6	116/20 5.8
Residential density – total		Resettlement communities				Upstream/Down		
THEN		732/119 = 6.2				353/57 = 6.2		
NOW		850/119 = 7.2				372/57 = 6.5		
Residential Environment		THEN	44	34	7	4	6	9
There is room around the home to:		NOW	13	12	0	3	5	15
Garden		THEN	20	38	8	15	20	11
NOW		15	35	19	3	13	13	13
Grow fruit trees		THEN	19	40	8	16	22	20
NOW		20	25	26	4	9	20	17
Keep poultry		THEN	17	39	7	14	21	6
NOW		2	15	6	3	11	6	3
Raise pigs		THEN	10	34	4	8	18	8
NOW		1	5	6	0	6	17	2
There is nearby pasture for cows		THEN	18	34	7	4	6	9
NOW		20	13	12	0	3	5	15
Residential Environment - total		Resettlement communities				Upstream/Down		
Number of households who reported being able to:		Total surveyed population = 119				Total surveyed population = 58		
Garden		THEN = 103				THEN = 19		
NOW		= 45				NOW = 18		
Grow fruit trees		THEN = 111				THEN = 46		
NOW		= 72				NOW = 39		
Keep poultry		THEN = 112				THEN = 58		
NOW		= 75				NOW = 48		
Raise pigs		THEN = 104				THEN = 41		
NOW		= 26				NOW = 20		
There is nearby pasture for cows		THEN = 90				THEN = 34		
NOW		= 12				NOW = 25		



Map of Pacux drawn by community leaders, July 2003

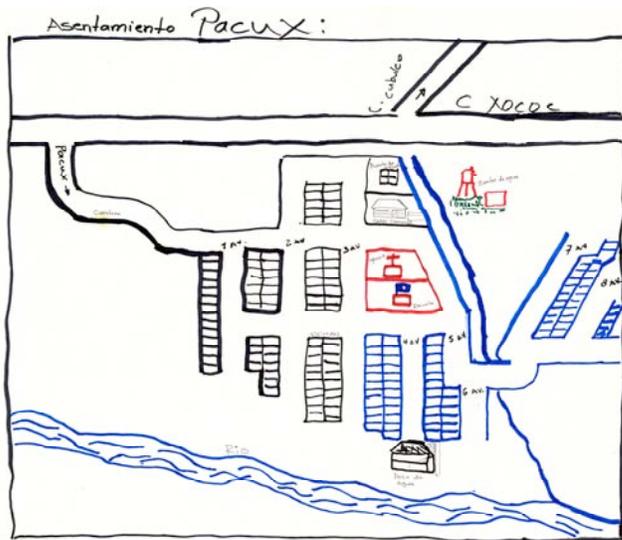


Home in Pacux

Table 4
Housing Conditions – Comparing Urbanized Resettlement Communities and
Traditional Settlements in the Dam-Affected Population

Residential density		Resettlement communities				Upstream	Down		
		Italia	Pacux	El Naranjo	Chicuxtán	Pajales	Chirramos	AguaBlanca	
THEN		109/20 5.5	274/45 6.1	309/46 6.7	40/8 5.0	85/16 5.3	152/22 6.9	124/20 6.2	
NOW		108/20 5.5	299/45 6.5	370/46 8.0	73/8 9.2	110/16 6.9	146/22 6.6	116/20 5.8	
Residential density – total		Resettlement communities				Upstream/Down			
THEN		732/119 = 6.2				353/57 = 6.2			
NOW		850/119 = 7.2				372/57 = 6.5			
Residential Environment		THEN	<u>18</u>	<u>44</u>	<u>34</u>	<u>7</u>	<u>4</u>	<u>6</u>	<u>9</u>
There is room around the home to:		Garden	20	13	12	0	3	5	15
		NOW	<u>20</u>	<u>45</u>	<u>38</u>	<u>8</u>	<u>15</u>	<u>20</u>	<u>11</u>
		Grow fruit trees	15	35	19	3	13	13	13
		NOW	<u>19</u>	<u>45</u>	<u>40</u>	<u>8</u>	<u>16</u>	<u>22</u>	<u>20</u>
		Keep poultry	20	25	26	4	9	20	17
		NOW	<u>17</u>	<u>41</u>	<u>39</u>	<u>7</u>	<u>14</u>	<u>21</u>	<u>6</u>
		Raise pigs	2	15	6	3	11	6	3
		NOW	<u>10</u>	<u>42</u>	<u>34</u>	<u>4</u>	<u>8</u>	<u>18</u>	<u>8</u>
		There is nearby pasture for cows	1	5	6	0	6	17	2
Residential Environment - total		Resettlement communities				Upstream/Down			
Number of households who reported being able to:		Total surveyed population =119				Total surveyed population =58			
Garden		THEN = 103				THEN = 19			
		NOW = 45				NOW = 18			
Grow fruit trees		THEN = 111				THEN = 46			
		NOW = 72				NOW = 39			
Keep poultry		THEN = 112				THEN = 58			
		NOW = 75				NOW = 48			
Raise pigs		THEN = 104				THEN = 41			
		NOW = 26				NOW = 20			
There is nearby pasture for cows		THEN = 90				THEN = 34			
		NOW = 12				NOW = 25			

Table 4								
Housing Conditions – Comparing Urbanized Resettlement Communities and Traditional Settlements in the Dam-Affected Population								
Residential density	Resettlement communities				Upstream	Down		
		Italia	Pacux	El Naranjo	Chicuxtin	Pajales	Chirramos	AguaBlanca
	THEN	109/20 5.5	274/45 6.1	309/46 6.7	40/8 5.0	85/16 5.3	152/22 6.9	124/20 6.2
	NOW	108/20 5.5	299/45 6.5	370/46 8.0	73/8 9.2	110/16 6.9	146/22 6.6	116/20 5.8
Residential density – total		Resettlement communities			Upstream/Down			
	THEN	732/119 = 6.2			353/57 = 6.2			
	NOW	850/119 = 7.2			372/57 = 6.5			
Residential Environment There is room around the home to:	THEN	18	44	34	7	4	6	9
	<u>Garden</u>	20	13	12	0	3	5	15
	<u>Grow fruit trees</u>	20	45	38	8	15	20	11
	<u>Keep poultry</u>	15	35	19	3	13	13	13
	<u>Raise pigs</u>	19	45	40	8	16	22	20
	<u>There is nearby pasture for cows</u>	20	25	26	4	9	20	17
		17	41	39	7	14	21	6
		2	15	6	3	11	6	3
	10	42	34	4	8	18	8	
	1	5	6	0	6	17	2	
Residential Environment - total Number of households who reported being able to:		Resettlement communities			Upstream/Down			
		Total surveyed population =119			Total surveyed population =58			
	<u>Garden</u>	THEN = 103 NOW = 45			THEN = 19 NOW = 18			
	<u>Grow fruit trees</u>	THEN = 111 NOW = 72			THEN = 46 NOW = 39			
	<u>Keep poultry</u>	THEN = 112 NOW = 75			THEN = 58 NOW = 48			
	<u>Raise pigs</u>	THEN = 104 NOW = 26			THEN = 41 NOW = 20			
	<u>There is nearby pasture for cows</u>	THEN = 90 NOW = 12			THEN = 34 NOW = 25			



Map of Pacux drawn by community leaders, July 2003



Home in Pacux

Socioeconomic Use of River Resources

Rio Negro circa 1977



Rio Negro



Table 5
Socioeconomic Use of River Resources

	THEN	NOW
Fish for household food	Yes = 144 out of 177 81.4%	Yes = 22 out of 177 12.4%
Fish to sell	Yes = 86 households 48.5%	Yes = 6 households 03.3%
Ability to capture frogs	Yes = 141 = 79.6%	Yes = 38 = 21.4%
Ability to find and harvest crabs	Yes = 117 = 66.1%	Yes = 37 = 20.9%
Ability to capture migratory birds	Yes = 24 = 13.6%	Yes = 3 = 01.7 %
Ability to find and harvest wild bird eggs	Yes = 21 = 11.9%	Yes = 5 = 02.8%
Ability to capture turtles	Yes = 13 = 07.3%	Yes = 0 = 0%
Ability to find and harvest shellfish	Yes = 30 = 16.9%	Yes = 5 = 02.8%
Ability to capture iguana	Yes = 27 = 15.3%	Yes = 10 = 05.6%
Ability to gather jute	Yes = 33 = 18.6%	Yes = 8 = 04.5%
Ability to gather reeds	Yes = 110 = 60.4%	Yes = 22 = 12%
Access and use of clay deposits	Yes = 112 = 62.1%	Yes = 57 = 32.2%
River is used as drinking water	Yes = 56 = 31.6%	Yes = 49 = 27.6%
River used to bathe and to clean clothes	Yes = 145 = 81.9%	Yes = 47 = 26.5%
Water from river carried and used in household garden	Yes = 72 = 40.7%	Yes = 15 = 08.5%
Water from river used to irrigate household and community farmland	Yes = 39 = 22%	Yes = 0 = 0%
River used to swim and play	Yes = 139 = 78.5%	Yes = 27 = 15.3%

Table 6		
Fish		
	THEN	NOW
Do you catch fish for your family food needs?	144/177 81.3%	22/177 12.4%
How many types of fish are caught?	11	5
How many types of fish are caught through out the year?	7	5
If you catch more than you can eat, what do you do with the surplus?		
Salt fish and store for later use	139	38
Keep live fish in a barrel	4	0
Keep live fish in a pond	2	1
Give away fish	29	0
Trade fish for other food or goods	39	0
Sell fish at market	86	6
How many times do you have fish with your meal?		
All meals	28	0
At least once a day	47	0
Several times each week	57	40
Once a week	30	44
A few times each month	7	69
None	8	24

Fishing



- The number of households who caught and sold fish dropped from 49% to 03%.
- Consumption of fish several times each week dropped from 74% to 23%.

Household Survey population consumption of fish at least once a day:			
	Then = 42.4%		
	Now = 0%		
Consumption of fish at least once each week:			
	Then = 91.5%		
	Now = 49.7%		
Changes in frequency of fish consumption in household diet:			
	None	3 or 4 times per month	3 or more times per week
THEN	8	37	132
NOW	24	113	40

Table 7
Access and Use of Forest Resources

	THEN	NOW
Ability to harvest timber for construction needs	Family use = 169 Sell = 45	Family use = 49 Sell = 2
Use of the forest to harvest firewood	Family use = 142 Sell = 52	Family use = 54 Sell = 19
Major species harvested: <i>Pino</i>	127	40
<i>Yaje</i>	115	17
<i>Roble</i>	34	2
<i>Taxico</i>	24	12
<i>Cipres</i>	16	11
<i>Wiluwisto</i>	9	1
<i>Cedro</i>	8	1
Harvest wood to make ocote torches	Family use = 113 Sell = 100	Family use = 24 Sell = 4
Harvest timber to build boats	98	22
Use trees and forest plants to make fishing nets and other equipment	84	19
Ability to gather palm leaves	Family use = 164 Sell = 143	Family use = 41 Sell = 56
Ability to find and use medicinal plants	Yes = 161	Yes = 69
Total number of plant species used	37 species	23 species
Ability to hunt wild animals	Yes = 141	Yes = 28
Total number of animal species hunted	19 species	11 species
Ability to find and harvest wild honey	Yes = 118	Yes = 23
Keep bees and sell honey	Yes = 1	
Ability to find and harvest mushrooms	Yes = 94	Yes = 36
Ability to find and harvest berries	Yes = 59	Yes = 28
Ability to find and harvest herbs used in cooking	Yes = 25	Yes = 12
Agua Blanca replies to question of current access to forest resources: “ninguno porque esta prohibido” “aqui ya no se consigue nada” “ no porque no se encuentro nada yas son lugares sin bosque” “tenemos prohivido por el patron”		

Table 8 Firewood		
	THEN	NOW
In the area around the home, can you find firewood for household needs?	Yes = 137/177	Yes = 63/177
How often do you leave home to collect firewood?	Daily	61
	Several times each week	77
	Once a week	39
Do you purchase wood?	0	66

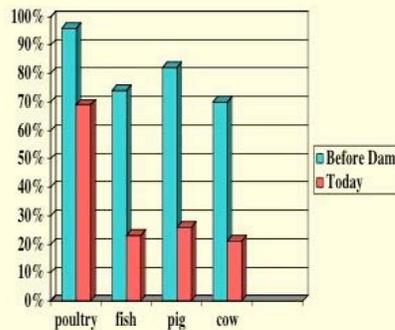
Table 9 Sacred Sites		
	THEN	NOW
Sacred sites in and adjacent to the River are identified and uses are described	Yes = 75	Yes = 3
Sacred sites in forests and hills are identified and uses are described	Yes = 144	Yes = 7

Table 10 Farm land		
	THEN	NOW
Number of households reporting access to farm land*	Yes = 172 No = 5	Yes = 150 No = 27
Total amount of farm land available to households in this survey**	1170.2 manzanas	234.7 manzanas
If you had access to farmland, did you hire help?	121/172 70.3%	85/150 56.6%
Number of harvests per year?	1 = 149 2 = 22 3 = 1	1 = 131 2 = 19
Use commercial fertilizers? Total cost per year to fertilize crops?	Yes = 0 Quetzals = 0	Yes = 139 Quetzals = 54,754
How much time did it take to travel to your farmland?	30 min/less = 48 1 – 2 hr = 99 3 hr or more = 25	30 min/less = 46 1 – 2 hr = 65 3 hr or more = 39
Number of households who had land and produced enough surplus to trade	140/172 82.4%	72/150 48%
Number of households who had land and produced enough surplus from farm to sell	65/172 37.8%	13/150 8.6%
<p>*Responses = actual amount of land used by the household, including inherited rights to individually titled land, rights to use communal lands, and in the case of Agua Blanca community, tenure rights secured by annual rent.</p> <p>**Measurements for metered plots, and number of <i>barras</i>, <i>tareas</i>, and <i>cuerdos</i>, <i>manzanas</i>, and <i>caballerías</i>: Responses were converted to a standardized land measure where:</p> <p>437 square meters = 1 cuerda 16 cuerdas = 1 manzana 64 manzanas = 1 caballería</p>		

Table 11		
Resource production and use of surplus		
	THEN	NOW
All food needs met by household production	Yes = 139	Yes = 50
Surplus production from household garden and livestock	Trade = 77 Sell = 65	Trade = 22 Sell = 24
Number of households who caught enough fish to trade or sell	Trade = 39 Sell = 86	Trade = 0 Sell = 6
Milpa – number of households who produced enough surplus to trade or sell	Trade = 140 Sell = 65	Trade = 72 Sell = 13
Palm leaves – number of households who collected, used, and sold palm leaves	Family use = 164 Sell = 143	Family use = 41 Sell = 56
Crafted goods – production and sale of pottery, clothing, rope, matts, other fiber-woven goods	Sell = 83	Sell = 26
Forest products	ocote torches	Sell = 100
	firewood	Sell = 52
	construction timber	Sell = 45
		Sell = 4
		Sell = 19
		Sell = 2

Table 12		
Earning Money		
	THEN	NOW
Out of 177 households surveyed... how many households sold palm leaves and goods woven from palm leaves?	143 80.1%	56 31.6%
...sold fish.	86 48.6%	6 3.4%
...sold hand crafted items.	83 46.9%	26 14.7%
...sold prepared food, produce, animal products, animals in the market.	65 36.7%	24 13.5%
...worked for family or friends.	35 19.7%	34 19.2%
...worked as agricultural labor on nearby farm.	14 7.9%	21 11.9%
...left home to work as agricultural labor on farms.	96 54.24%	76 42.9%
...left home to work as day labor in factories, or other employment.	3 1.7%	51 28.9%

Household Access to Dietary Protein



- **Poultry** production declined from **96%** (with an average **34** poultry per household) to **69%** (with an average **14** per household).
- Consumption of **fish** several times each week dropped from **74%** to **23%**.
- **Pig** production dropped from **82%** to **26%**.
- **Dairy and cattle** production dropped from **70%** (a total of **1115 cows**) to **21%** (a total of **121 cows**).
- **Meat consumption** several times each week dropped from **30%** to **21%**.

Table 13
Food and Hunger – Total Sample

	THEN	NOW
Are you able to grow, hunt, fish, and trade for all your family food needs each year?	139/177 78.5%	50/177 28.3%
How many meals does your family eat each day?	3=169 2=8	3=162 2=11 1=4
How many times do you have meat (chicken, pork, beef) with your meal?		
At least once a day	7	2
Several times a week	46	36
Once a week	85	86
A few times each month	22	47
How many times do you have fish with your meal?		
At least once a day	75	0
Several times a week	55	40
Once a week	30	46
A few times each month	7	69
Are there times when there is no food and no money to buy food?	81	90
How often do you feel hungry and there is no food to eat?		
Everyday		16
Several times a week		36
A few times each year		43

Table 14
Food and Hunger – Comparative Findings

		Resettlement communities				Upstream		Down
		Italia	Pacux	El Naranjo	Chicuxtin	Pajales	Chirramos	AguaBlanca
Household ability to grow, hunt, fish or trade for all family food needs each year.	THEN	18	39	45	8	10	6	13
	NOW	8	27	0	0	6	3	6
Number of meals the family is able to eat each day:	THEN	3=20	3=43 2=2	3=46	3=8	3=11 2=5	3=22	3=19 2=1
	NOW	3=19 2=1	3=44 2=1	3=42 2=3 1=1	3=8	3=11 2=5	3=19 1=3	3=19 2=1
Frequency of meat consumption (chicken, pork, beef).	All meals	-	18 8	18 8	-	-	-	-
	Once a day	1	0	2	1	0	0	0
		0	0	0	0	0	0	0
	Several times a week	13	4	13	2	6	1	7
		8	2	7	3	4	4	8
	Once a week	4	33	18	4	3	15	8
11		23	26	4	5	13	4	
A few times each month	-	4 18	5 11	-	0 6	7 4	6 8	
Frequency of fish consumption.	All meals	1 0	4 0	22 0	-	-	1 0	-
	Once a day	8	16	14	5	-	1	3
		0	0	0	0	-	0	0
	Several times a week	7	26	5	1	8	1	7
		0	29	4	0	3	3	1
	Once a week	3	1	0	1	2	2	2
3		2	16	3	3	3	1	
A few times each month	0 15	1 12	0 16	1 3	2 3	2 3	1 17	
Are there times when you have no food and no money to buy food?	THEN	5	32	16	4	10	2	12
	NOW	7	17	35	7	7	2	15
How many times each week do you feel hungry and there is no food to eat?	Every day	8	1	-	-	1	-	6
	At least once a week	2	13	18	-	3	-	-
	A few times each year	2	11	14	3	3	-	10

Table 15
Community Infrastructure – Local and National Comparisons

	National	Urban	Rural	Household Survey Pop.	Resettlement Villages	Upstream and Downstream
Do the children in this house receive meals at school? (school feeding programs)	52%	42%	58%	T=165 37.6%	T=111 31.5%	T=54 50%
Home is connected to the electrical grid?	73%	95%	56%	97/177 54.8%	97/119 81.5%	0/58 0%
How is water supplied to your home?				122/177	77/119	36/58
Piped water in dwelling or yard	69%	88%	54%	68.9%	64.7%	62%
A tap in walking distance	-	-	-	12/177 06.8%	1/119 0.85%	11/58 19%
No water system - carry from river or spring	31%	12%	46%	43/177 24.3%	36/119 30.3%	7/58 12%
Household sanitary needs met by				22/177	4/119	18/58
Use the fields - no toilet facility	13%	03%	21%	12.4%	3.4%	31%
Improved Sanitation: Latrine or septic system	87%	97%	79%	115/177 65%	75/119 63%	40/58 69%
Sewage system	38%	76%	09%	40/177 22.6%	40/119 33.6%	0/58 0%
Fixed or cellular telephone in the home				30/177	24/119	5/58
Yes	15%	31%	03%	17%	20.2%	08.6%
Is there community public telephone? Yes	64%	89%	44%	113/177 63.8%	108/119 91.6%	15/58 25.8%
Sources: National, urban and rural school meal and infrastructure data from World Bank <i>Poverty in Guatemala</i> (2003) Table 12.3 "Coverage of Social Protection Programs and Private Transfers, Table 9.2 – Coverage of Basic Services, by Area and Quintile, and, Table A 4.1 – Guatemala: Select Poverty and Social Indicators at a Glance. Resettlement communities = Pacux, El Naranjo, Chicuxtín, Rosario Italia. Upstream and downstream communities = Chirramos, Pajales, New Rio Negro, Agua Blanca. No service = lack of all network services including electricity, piped water in dwelling or field, telephone (fixed or cellular) and toilet connected to sewerage.						

Table 16
Community Infrastructure – Comparative Findings

	Resettlement communities				Upstream		Down
	Italia	Pacux	El Naranjo	Chicuxtín	Pajales	Chirramos	Agua Blanca
Do the children in this house receive meals at school? (165 households with school aged children)	6/16	1/44	24/44	4/7	12/13	0/22	15/19
Home is connected to the electrical grid?	6/20	44/46	41/45	6/8	0/16	0/22	0/20
How is water supplied to your home?							
Piped into the home	18	41	12	6	23	17	8
A tap outside the home	-	4	1	-	2	-	1
A tap in walking distance	-	-	1	-	-	2	9
No water at all - carry from river or spring	2	-	32	2	2	3	2
Household sanitary needs ?							
Latrine	19	3	43	-	1	10	20
Septic system	-	1	3	6	6	3	-
Sewage system	-	40	-	-	-	-	-
Use the fields	1	1	-	2	9	9	-
Fixed or cellular telephone in the house?	3/20	7/45	13/46	1/8	0/16	0/22	6/20
Public telephone in the community?	19/20	39/45	43/46	7/8	0/16	0/22	15/20

Table 17
Drinking Water – Total Sample (T=177)

		THEN	NOW
How is drinking water supplied to your home?	Piped into the home	0	114
	A tap outside the home	0	8
	A tap in walking distance	0	12
	No water system - carry from river or spring	177	43
Do you purchase drinking water?		0	29
River water: Do you use the river for drinking water?		56	49
Are there times when there is no water to drink or use in the house?		30	128
Are there times when you drank river water and it made you sick?	yes	41	56
	common	23	18
	unusual	27	47
	everyone got sick	6	8
	only children and old people got sick	16	23

Wells and water sources have dried out:

Patzulup, San Juan Las Vegas, Pachec, and La Campana



River contamination affected people and fish:

Chirramos, Chitomax, Guaynep, Chicruz and Pueblo Viejo Cahuinal, San Juan Las Vegas, Patzulup, Pacaní, Xuaxán, Pachijul, Pachec, Chivaquito, Pichal, Xinacati 2, Rio Negro, El Zapote, Panquix, San Jose Chituzul, Agua Blanca.

Lack of water and water contamination:

Pacux, Rabinal, Baja Verapaz
El Naranjo, Cubulco, Baja Verapaz
San Antonio Panec, San Cristóbal, Alta Verapaz
Colonia Rosario Italia, Santa Cruz, Alta Verapaz

Table 18
Drinking Water – Comparative Findings

		Resettlement communities				Upstream		Down	
		Italia	Pacux	El Naranjo	Chicuxtín	Pajales	Chirramos	AguaBlanca	
How is drinking water supplied to your home?	NOW Piped into home	18	41	12	6	12	17	8	
	A tap outside the home	0	4	1	0	2	0	1	
	A tap in walking distance	0	0	1	0	0	2	9	
	No water system - carry from river or spring	2	0	32	2	2	3	2	
Do you purchase drinking water?		0	8	18	3	0	0	0	
River water: Do you use the river for drinking water?	THEN	1	1	32	0	6	8	8	
	NOW	8	20	3	1	4	11	2	
Are there times when there is no water to drink or use in the house?	THEN	1	8	0	0	4	0	17	
	NOW	18	39	42	8	5	0	16	
Are there times when you drank the river water and it made you sick?	THEN	9	8	0	2	12	6	4	
	NOW	6	0	16	4	9	1	20	
	common		2	1	0	2	12	6	0
			0	0	5	0	3	1	9
	unusual		3	14	0	1	0	0	9
			10	0	33	1	3	0	0
	everyone got sick		0	5	0	0	0	1	0
			0	0	7	1	0	0	0
	only children and old people got sick		7	2	0	1	0	2	4
			1	0	8	3	0	0	11

Peer Review Findings

Santa Fe Group on Reparations and Development Statement on Chixoy

The Santa Fe Group on Reparations and Development is composed of civil society, scientific and human rights specialists with decades of experience with resettlement programs. The following statement was promulgated in Santa Fe, New Mexico on November 10, 2004 with respect to legacy issues arising from the violence, the hardships, and the impoverishment associated with the Chixoy Hydroelectric Project.

Global experience demonstrates that the fundamental provisions to enable successful resettlement programs must include:

- Legal acquisition of land to be expropriated and compensation in full.
- Provision of opportunity to build viable livelihoods for the affected people.
- Design of a viable resettlement plan and an agreed budget with the consent of the affected people.
- Supervision of the execution of the plan by both the financing and implementing agencies.
- Corrective action where and when obstacles are identified in the execution of the plan, in consultation with the communities.

In the case of Chixoy Hydroelectric Project in Guatemala, the legal agreements were inadequate to address the provisions above. Nonetheless, the agreements obligate the Government of Guatemala (GoG), the Instituto Nacional de Electrificación (INDE), the Inter-American Development Bank (IDB) and the World Bank (IBRD) to legally acquire land and to replace housing and public services (Loan Number 1605 GU, Loan Agreement, Chixoy Power Project, Dated July 21, 1978). These obligations are written into legal agreements that have the status of international law and which therefore were binding on the GoG even during the period of military rule.

Our review of evidence documented in studies spanning 20 years results in the following findings.

- Resettlement requirements of the project were inadequately addressed in initial loan documents of IDB and IBRD, which reference a consultant's report with no agreed budget.
- Land acquisition for project construction was not completed and is still incomplete. No realistic (acceptable to the affected people) effort was made to restore the livelihoods of affected people in violation of the Banks own legal agreements.

- The IBRD and INDE were informed in 1984 of the failed resettlement process and the risks of impoverishment of the people, but failed to correct the situation when provided the opportunity via the second loan negotiations, representing a violation of IBRD policies. This gives rise to institutional culpability for inducing impoverishment.
- Project affected people were not systematically consulted, despite their repeated protests and petitions requesting such to the authorities and the Banks.
- IBRD and IDB continued to disburse funds and negotiated a new loan without taking into consideration the escalating violence harming project-affected people.
- The Banks did not take reasonable and responsible actions when in 1996 firm evidence was established of deepening impoverishment of the affected people, of INDE's failure to correct prior errors in good faith, and of IBRD'S violation of its own policies. Instead, the IBRD and IDB responded in a way that failed to engage the affected people in planning culturally adequate and comprehensive corrective plans.

We conclude that the people affected by the Chixoy Dam have a strong and just claim for restitution and grounds to seek legal redress. The negotiation process concerning reparations and development has been initiated. We welcome this development and urge all parties to honor their obligations by participating. We would caution against any process that leads to premature closure. This is because the issues are complex, the actors numerous, and the process incomplete.

We suggest that:

- The first step in the negotiation process should be to allocate external financing for the process of reaching agreement on the rules of the negotiations.
- This financing should include the costs of participation in the first year of negotiations on the part of GoG, IDB, IRBD and costs on the affected people.
- This financing should not impose further hardship to the affected people.
- Funds to finance the negotiations should be available from the Rural Electrification Trust Fund or comparable assets agreed upon by GoG, IBRD, IDB and INDE.
- Simultaneous with the work to agree on the rules of the negotiations, all parties involved should address the urgent needs (e.g. potable water, electricity and adequate food and health care) in the interest of humanitarian consideration.

We therefore urge the stakeholders to convene and write terms of reference to guide the negotiations process, including structure, logistics and rules of the negotiations that permit continuous consultations among representatives of affected people, their indigenous authorities, and their wider communities.

Signed,

Santa Fe Group on Reparations and Development

Linda M. Whiteford

Professor of Anthropology, University of South Florida; President, Society for Applied Anthropology (SfAA). **Statement endorsed by the SfAA Executive Board.**

Thayer Scudder

Emeritus Professor of Anthropology, California Institute of Technology; Former Commissioner, World Commission on Dams.

William L. Partridge

Professor of Human & Organizational Development and Professor of Anthropology, Vanderbilt University; Former Lead Anthropologist, Latin America and Caribbean Region, World Bank.

Anthony Oliver-Smith

Professor of Anthropology, University of Florida; Involuntary Displacement Consultant; Chair, American Anthropological Association Commission on the Status of South American Indigenous Peoples.

Ruth M. Krulfeld

Professor Emeritus of Anthropology and International Affairs, The George Washington University; Member, Committee on Scientific Freedom and Responsibility and Human Rights of the American Association for the Advancement of Science.

Carmen Garcia-Downing

Research/Indigenous Affairs Specialist, Rural Health Office, University of Arizona.

Barbara Rose Johnston

Senior Research Fellow, Center for Political Ecology; Adjunct Full Professor of Anthropology, Michigan State University; Emeritus Chair, American Anthropological Association Committee for Human Rights. **Statement endorsed by the AAA Committee for Human Rights.**

Stephen A. Hansen

Science & Human Rights Program Project Manager, American Association for the Advancement of Science. **Statement endorsed by the Science and Human Rights Program of the AAAS.**

Nicholas Hildyard

Director, The Cornerhouse, United Kingdom.

The Honorable Ted Downing

Representative, Arizona House of Representatives; Research Professor, University of Arizona; President Emeritus, Society for Applied Anthropology; Chair, The International Network on Displacement and Resettlement.

Michael M. Cernea

Research Professor of Anthropology and International Affairs, George Washington University.

Monti Aguirre

Latin America Program, International Rivers Network, Berkeley, California.

Attachment A: Qualitative Research Interview Summaries

REPORT ON THE TARGETED QUESTIONS

Elisabeth Biesemans
Bert Janssens

July 2004

1. Downstream Experiences with the Dam: Agua Blanca Community

Collective interviews by Elisabeth Biesemans and Bert Janssens with four men of Agua Blanca and the assistance of two community investigators.⁴

Life Before and after the dam

Before the construction of the dam, the water was clean, the river had a constant current and it contained a lot of different types of fish. Neither mosquitoes nor malaria were to be found on the river banks in Agua Blanca before the dam. *“Before the river was clean and clear. Now the river is contaminated because of the dam; this causes illnesses in the community.”* *“Before the water always flowed and the water level was fairly constant. The lowest part was at the shoulder, where you could pass.”* *“Now if livestock dies by the river, it stays there and contaminates everything; before it could easily be swept away by the river and did not contaminate.”* Then INDE came and started to build the dam and the tunnel. *“They hardly explained to us what they were doing or planning to do.”* Still, at an already advanced stage of the dam construction, some INDE representatives started to offer land to the people in Agua Blanca as compensation. However, nothing came of these promises.

Now the water hardly ever flows, it is not longer clear, but dirty. *“Before we could drink from it and bathe in it. If we bathe now, we get sick in 8-15 days. We get rashes and pimples.”* There are a lot of mosquitoes that cause malaria. And, there is hardly any fish in the river anymore. Those fish that are present, are often infected with worms and thus inedible.

If the reservoir spills over, the fish do not come along with it, because INDE has stretched out a net to collect all the fish. If some fish do get through it *“they are sometimes all bruised, sometimes dead from the pressure.”*

⁴ This report has been edited and abstracted from two interview summaries prepared by Bert Janssens and Elisabeth Biesemans in July 2004. The original reports also provides detail on traditional knowledge and ceremonial practices; informant views on the history and problems with youth gangs in the resettlement communities; and, Pajales land rights and conflict between the communities of Pajales, Río Negro and Xococ concerning communal title. In this account, except for those whose deaths are described, names have been removed to protect the identity of informants.

Rupture in the mountain tunnel

Some 21 years ago, after some months of having felt little earthquakes in the mountain, suddenly a high-pressure fountain of water burst out of the mountain. Residents had warned INDE that problems were emerging, as evidenced by increase in small earthquakes, but the INDE engineers did not believe them. INDE had performed tests by adding color in the tunnels to see whether the water coming out of the mountain had the same color, but they had troubles in detecting it. The rupture in the tunnel must have taken place some time before and the water must have gradually found its way through the mountain through different places. Then suddenly, it burst out of the mountain like a high-pressure fountain at a spot near the houses and destroyed them.

The water washed away three houses (informants gave the name of the owners who lost their homes). Two other houses were flooded and completely destroyed by this outburst of water, and six or seven more houses were threatened by it. Once they shut the water entrance in Pueblo Viejo, the water stopped coming out of the mountain. One man says he went to see the gap in the tunnel and saw that it was hovering in the air, because all the sustaining earth around the tunnel had been washed away. *“I was a military commissioner and so had to go and report all this to the base and to INDE, but they did not believe me.”*

Over 10 families lost their homes and had to move to other places. None of the losses from this destruction or the costs of moving the families and rebuilding homes were compensated.

Loss of life and other downstream hazards

Before the Arzú administration the dam did not have automatic doors (*compuertas*), so when the water in the reservoir reached its maximum level, it slowly trickled over the spill gate and gradually increased the river flow downstream from the dam. In downstream communities, this gradual increase in river flow allowed time to recognize the dangers of imminent flooding and to take necessary precautions. However, during the Arzú administration automatic doors with sensor units were installed and since then (after 1996), without any form of notice, the doors open, the water is released from the reservoir under extremely high pressure, and an instant current is created that flows rapidly through the downstream communities.

Like other downstream communities, the Agua Blanca community has found this system of automatic sensors controlling the floodgates to be, at times, extremely dangerous. The danger increases during the months from September through December, when the reservoir reaches its maximum levels because of the rainy season. Dangers may still be present even when the water level is low, as illustrated by the case of a few years ago, when some *gringos* came to visit the Río Negro community. As there was no apparent danger that the doors would open since the water level was still very low, the *gringos* parked their cars under the dam. However, a frog got caught in the sensory system, and the floodgates suddenly opened and washed away the cars.

“If it is raining, sometimes the automatic doors open every hour. Before the doors, sometimes the water was high for about 2 months.” “Now with automatic doors, the river is constantly changing levels; it is much more dangerous since there is no warning of it; before, it was much more gradual.” “Now it is just too much water that they are throwing out at the same time!” “The water arrives to Agua Blanca all dirty, with sticks and stones, soils, brought everything from upstream. The river grows with dirty water.”

Sudden changes in the current have caused several deaths. One of them was Juan Ventura Morán. His son told us how his 64-year old father went fishing on the evening of the 29th of October 1998. This was when hurricane Mitch had swept through the country, and rains in this area left the reservoir at its maximum height. The doors opened and flash flood swept away his father. The dogs that were accompanying him alerted his family, who searched for him for eight days, but could not find his body. Some days later, when the river current had slowed and water levels declined, they found his fishing net tied to a tree. As his father lived in Finca Plan Grande, Chicamán, Uspantán, his death certificate should be in the municipality of Chicamán.

Another story tells how Baudilio (they cannot remember his last name) from Palencia, Tactic, wanted to cross the river with his cow just at that time when the doors were opened and the current took him along. This happened on the 14th of September, presumably 1997. And, in the downstream village of Chixoy, two years ago the current swept away another man (from the family Barondo) who was fishing.

Agua Blanca informants also recounted how a boy from El Zapote drowned in a deep pool of water (whirlpool?) that was created by the flash flood. And, they tell the story of Rigoberto Caal (Modelo Agua Blanca, Chicamán) who was playing football with his friends along the river with the strong current. The ball fell in the water and in his attempt to go and fetch it, he lost his fight against the current and drowned.

The river is not only dangerous because of flash floods and strong currents, but the bridges built by INDE to cross the river also present dangers. In 1989, a woman from the Pajuil community crossed the wooden hammock bridge, lost her balance and fell into the current and drowned. Since then the Agua Blanca community does not use this bridge.



Throughout our interviews Agua Blanca informants expressed concern about the constant dangers they face: “*What if the dam breaks? What if the tunnel ruptures again? What will happen with us? And with the other downstream communities? We will be swept away by the tide.*” With regards to the tunnel, they worry of another rupture because “*sometimes we hear the rocks banging in the tunnel.*”

Community Needs

Despite the damages experienced during dam construction and the dangers faced by the community as a result of dam operations, the community has not received “dam-affected” status, has not been compensated, and has requested to be resettled.

For several generations, the Agua Blanca community has lived on land of a finca owned by a *patron*. They do not own the land where they live and work, and recently there have been some problems with the *patron*. Beginning in early 2004, he wanted to charge every family Q 350 for renting the land they live on. This resulted in a division within the community: 17 families agreed to pay the *patron*, while the other 42 families of the community were against it, claiming lifelong and multi-generational occupation of the land. After a tense period of discussions, the community agreed to a plan where the *patron* provides 21 *cuerdas* for each family with titles, on land that is higher up the mountain. The landowner promised to help them grade the hilltop. The community would have to pay measure the land and rebuild their houses. So, they collected the money for the measuring the land (Q 12,000), but on their way to the firm in Cobán, they were attacked and robbed of the money. Informants suggest that the thieves had been tipped off by someone within the community.

The main needs of the Agua Blanca community are therefore: land (good and enough, because 21 *cuerdas* do not suffice), housing, and electricity.

2. Upstream experiences with the dam: Pajales Quiché Community

Interviews and observations from a three-day visit to Pajales Quiché for three days, by Bert Janssens with the assistance of two of Cubulco investigators.

Pajales Quiché

There are two Pajales communities: Pajales Quiché and Pajales Cubulco. Although the two communities are neighbors - and by now most of them have family ties through marriage - there are important differences between both of them. Pajales Cubulco are people from Cubulco while in Pajales Quiché, the inhabitants are originally from Rabinal. Ninety-eight years ago the first twenty families migrated from Rabinal to Pajales Quiché, which nowadays belongs to the municipality of Chicamán, Quiché. But they have conserved their link with Rabinal over the years: they speak the Rabinal language (which is different from the Cubulco language, although both variants belong to the Achi branch, which in turn is a member of the larger Quiché language family). They call themselves Achi (instead of Quiché, which is the department they geographically belong to) and the women still dress in the Rabinal style. The Pajales people weave palm mats (*petate*) they

sell at Q 4 a piece (which is a day's work). They live off what their land produces, *"but, sometimes it does not rain and our cornfields dry up."* The majority of the people migrate at least once a year to a finca, where they receive a Q 24 daily wage.

Access to Pajales is easier in the rainy season. We went by car to Pakani, walked to San Juan Las Vegas, took a motorboat to Cawinal, and walked two hours upstream along the river. It is a lot easier than taking the Chitomax climb. (This should be possible till at least the end of January or middle of February, depending on the rainy season). In the dry season there is no access from San Juan to Cawinal by boat. You can walk all the way from Pakani to Cawinal, but that is a three hour walk.

...INDE

Dr. Gaitán came to visit the Pajales community several times in a helicopter and offered: drinkable water, irrigation for the land and work. But nothing came of it.

"Then the foreigners came. We saw them and we heard the bombs exploding. But never did they ask us permission."

"They did not negotiate with us. They negotiated with Río Negro, who sold a lot of things of our land to INDE like sand and did not send notice to us. We went to the Human Resettlement office of INDE and were shown large files indicating that the Vega de San Pablo had already been paid to them, to the Río Negro community."

"INDE didn't keep to its promises. We received nothing from them. Not even a day of work in the tunnel was offered to us."

Although the Pajales community did not have to move from their dwelling place, they saw their life significantly altered by the dam basin... Some of their land was flooded by the basin. And their access to Rabinal has been blocked... Because of their cultural link to Rabinal, they used to go to Rabinal on market days, but now: *"It is not that easy anymore to cross the river. In Los Encuentros (de Chicruz) we cannot cross anymore. If the basin reaches its low level, its banks are filled with mud that makes it impossible for us to pass. If the water level is high, we can cross by boat, but the Chicruz people charge us a lot of money, just to cross. Sometimes we have to pay up to Q 30 for this small boat trip."*



There used to be a hammock bridge across the Chixoy River in Chicruz. This apparently was replaced by one in La Periquera (community next to Chicruz), but the large distance made that the wind immediately blew away the wood of the bridge. Only the cables remain.

They can use the Chitomax hammock, but it is at a three hour steep uphill walk and then they are only in Chitomax, which is an hour and a half by car to Rabinal (and requires paying for the transport): *"This change has*

been painful for us! It took away some of the commercial advantages we had. Before we went to the market in Rabinal to buy and sell. Now, it is not that easy anymore to get there.”

The reservoir is a significant impediment to maintaining Pajales’ social and cultural links with Rabinal. Given the difficulty of traveling to Rabinal, people still prefer this market when they can afford to time and transport costs. When asked why, I was told: *“We have to go, because in Chicamán we cannot find the huipiles (woven blouses that vary from community to community) for our wives. And we still have family living in Rabinal.”*

Community needs

...In Pajales they have a local municipality (“*alcaldía*”) and a primary school. Once the youngsters have finished their first grades, they can only continue school through radio education (IGER). There is one Catholic Church and two Evangelical churches.

Recently, a Swiss NGO called ProVictimis donated the construction of a health center. Now they have a nice building but no medicines. While we were there, several people reported themselves sick, but a notice on the window of the health center said that there were no more medicines left. They report more illnesses than before. Last week, three children had died in the community because of *“high temperature”*.

“We need a road! The road already gets to Belejú and from there it would be 12 or 13 km down to Pajales, but nobody wants to open this new stretch of road. From here till there, it is a steep three-hour walk uphill. If we carry a sick person on our back, it takes us like 4 hours.”

Apart from the desperate need of the road, connecting Pajales to Belejú, Pajales residents expressed the need of electricity, latrines, herb gardens...

The sense that Pajales is an isolated community prevails in their repeated comments that nobody helps them: *“We’re an abandoned village. It’s very hard to communicate.”* *“Life is hard and difficult here.”* *“We’re tired of institutions coming here to offer us things and projects that they never carry out.”*

3. Militarized Life in Pacux

Experiences of three people from Río Negro.

Informant #1 (age 66) had twelve children. Four of them and their mother were kidnapped in 1982 by helicopter at Ya’ Ch’iich’ – Los Encuentros. The remaining eight are still alive. One of them, a son (32 y.) born in Río Negro, emigrated to the capital. Five are his second wife’s children from her first marriage. The latter two, from his marriage with his second wife, were born and raised in Pacux.

He moved with his family to Pacux on July the sixth 1982. At the beginning of the eighties there was a military base next to the place known as The Calvary (“*El Calvario*”) and

cemetery number one. It lasted about two or four years. In the end the military installed themselves at the airstrip Fray Bartolomé de las Casas where they remained for about twenty-three years. By that time people were free to leave and enter Pacux. The soldiers would just look on passers by. Only the so-called “*garrinchos*” or “*guerrilleros*” were caught. (The informant laughs at those specific words, since these were false accusations, for they never possessed any arms).

The women were sent back to Pacux the same day, but their husbands were imprisoned in a latrine for eight days without food and anything to drink. They were battered constantly until Lieutenant Díaz told them to return to Pacux and abstain from anything wrong, because the commissioners would be watching them. Some soldiers brought them back and handed the men over to the commissioners from Pacux: “*This is where you are going to live. You will not engage in anything from the woods.*”

They could not go to their lands or to the South Coast to earn a living. They were not allowed to travel and work on the plantations (“*fincas*”) from 1981 till 1986.

“*They were constantly watching us. It seemed like they had infected us with some disease. They had turned us into dumb and stunned people. They told us they would kill us as soon as we would make a move.*” Both military and commissioners from Pacux watched them constantly. If someone fled his remaining children would be killed.

Because they were not allowed to leave and look for food the military distributed *Incaparina*, maize and beans the first three months in turn for forced labor at the military base. Later, the people were helped out with food supplies by the local parish, nuns, Caritas and CIF (Family Integration Centre - Centro de Integración Familiar). The nuns also provided the women with palm leaves to weave palm mats at home, which the women could sell on Sundays at the market. The money earned was then used to buy maize. This is how the women helped to sustain their families while their husbands were not allowed to go and work themselves, unless the forced labor they continuously were summoned to do at the military base: gather firewood, build latrines, etc.

The people chosen to be commissioners were persons who had sympathized with the military before. They received direct orders from the military and were the first to come and live in Pacux. Both military and commissioners, although most of the latter were from Río Negro themselves, ill-treated and accused the other inhabitants of being “*guerrilleros*” and called them “beasts” (“*itzel chikop*”) for having lived so many years as refugees in the woods. They threatened the people with killing the entire family of those who criticized. They would tell the military and death would follow.

The commissioners, together with the military, would summon all men daily at the command post in front of a house in the first street in order to check if no one had fled. The men were told to watch for “*guerrilleros*” sneaking into Pacux and to denounce them. The person who did not denounce them was said to be one of them. Those who fell asleep during their turn were woken up with a bucket of water and lowered down into a well of ten meters depth behind the command post (generally referred to as “*el hoyo*” – the hole). The same happened to those who were drunk or refused patrolling. At night the commissioners would throw water and toads on the prisoners’ heads. It was meant to be a punishment that usually lasted from one night to a night and day. Even women did not escape from this pit. A man and his wife were once lowered into the well because the man was drunk and hit his wife. The

interviewee's own father was punished the same way for questioning the commissioners' ill-treatment of the people. Another man died after publicly criticizing the patrolling system and the fact that the commissioners were watching innocent farmers instead of "guerrilleros". His name was Francisco Sánchez Chen. A witness saw how the commissioners from Pacux abducted him.

The Patrollers were obliged to raise the national flag in the mornings and lower it in the afternoon while singing Guatemala's national anthem. The commissioners also made them learn and sing the Patroller's Song. Those who refused would be accused of belonging to the guerrilla. When a commissioner was drunk he would batter the men on duty and during meetings.

The informant fears that the ill-treatment they have received by the commissioners' hands has not vanished at all. On the contrary, he suspects them of wanting to hurt them again as soon as they are given the opportunity to do so.

According to this informant, the worst part of their lives under the military were the killings, the "harsh law" they applied on them, and the fact that, since then, they cannot provide for themselves and are forced to steal firewood on other people's lands. He cannot think of anything positive since the military have left, for now Pacux is left behind without a guaranteed application of "the law". They are being counseled by human rights activists but he questions their help: *"They are around now, but as soon as the killings start again they will no longer speak up for us because they will have fled."*

Informant #2 (age 44) had ten children. His first child died with its mother in the massacre of Pak'oxom. He married again and had eight children with his second wife, who died January 5th 2004 when pregnant with the ninth. He raised a stepdaughter, his second wife's daughter from her first marriage, who is actually living with her husband and children in El Quiché.

He came to live with his family in Pacux in August 1983. When they first arrived they were not allowed to leave the settlement and were fenced in. He slept with his family in the house he still owns. The next day commissioners ("*comisionados*") came and took them to the military base at INEBE, close to the airstrip Fray Bartolomé de las Casas. They were accompanied by three other families.

He remembers one or two meetings with the military at Pacux (in the communal house, "*centro comunal*") and another one in the town centre of Rabinal. They usually spoke in terms of advising against engaging with the guerrilla again as the people were accused of doing in Río Negro: *"Do not move again. Remember the massacres of Río Negro!"* is what they said.

When patrolling they had to raise the flag at the command post daily and sing the National Anthem. (When inquiring about its text the informant laughs, and with a grin says: *"I have long forgotten, because that is not ours!"*).

The military base abducted its water from the tubes that led from the town centre to Pacux. It was Pacux's water. They had solicited it at the municipality, but were forced to share it with the military in order to avoid major problems.

According to this informant, the military stopped the patrolling in 1985. *“The military has affected us, from Río Negro, deeply. I cannot wipe it from my memory, I cannot erase it from my heart, because everything I tell you I have witnessed with my own eyes.”* Because of the miserable life they were living, the informant decided to leave with his family. In 1985, he asked permission from the commissioners’ commanding officer to go and work at Petén for a limited period of time. By that time one was allowed to leave with a written permission for fifteen or twenty days. He did not return, and instead worked at Petén and the South Coast. He finally settled for two years at Tierra Blanca (Chisec, Cobán) where a ladino offered him a house in turn for working his land. He returned in 1989 to Pacux in order to avoid INDE and the Pacux-committee from donating his house to someone else if he were not present. Some people lost their houses for being absent at that time. There were families from Cancun, Chitucan and Chwa Mango (Mangales) that forcefully settled down in Pacux as well.

Finally, in May 1993, he worked with other Río Negro men and CONDEG (National Council of the Displaced of Guatemala - Consejo Nacional de Desplazados de Guatemala) to organize the legal exhumation (September 1993 until February 1994) and burial of their dead. They did not pay attention to the commissioners’ threats.

The worst part of living under the control of the military: *We suffered in different ways by the military’s presence in Pacux. We could not find new earnings. We were not allowed to visit our former lands: not to sow maize, neither to recover our belongings, nor to bury our wives and children that were assassinated at Pak’oxom. They would kill us at once if we did.*

The advantage of the military having left is that people in Pacux organized themselves into a committee. It feels as if he had taken a medicine and is healed again. There is no killing anymore. By leaving, the military has given room to the survivors to look for and exhume their dead. They are no longer afraid of the military. Even when they were still present, the signing of the Peace Accords in 1996 made an end to their power. They legally were no longer supposed to be in Rabinal, which was notable in their behavior as well: they no longer bothered.

Informant #3 (age 40) had seven children. She is raising her children alone, as her husband was forced to migrate to the city to find work. He left in 1996, because there was no land left to grow crops on when the Pacux-committee distributed the communal land amongst the inhabitants of Pacux.

She settled with her family in Pacux in 1983. During the first year of her settlement the soldiers came and marched through Pacux every night to check on the Civil Patrollers. Those who refused to patrol were kidnapped, as happened to Francisco Sánchez Chen, a young man originally from Cancun or Mangales.

The commissioners’ commanding officer (from Rabinal, Zona 3) regularly came and called for meetings and selected people to go and work forcefully at the military base of INEBE. Men were obliged to dig holes, like trenches, to bury the people caught on the market place. Her husband was one of them. He obeyed in order to save his own life.

At that time, the time of the massacres, there were three commissioners in Pacux. The informant does not know the reason why they were selected. Afterwards they got dismissed by the military and replaced by two other men from Pacux, one who was her husband. Again she has no idea why they were chosen. Her husband tried to refuse: “*Tengo miedo de matar a la gente*” “*I am afraid of killing people*”, he said to the military, but they assured him those times had passed and killing was no longer necessary. They visited him three times and he finally accepted the job. It was his responsibility to make sure that the other Civil Patrollers served their turn and guarded the area each night. During the day he went to work in the fields. After lunch at home he checked on the Patrollers and went to work again. On Sundays he had to attend meetings in Pacux. He had to do this for five years, until orders came from Salamá, the capital of the department of Baja Verapaz, to dismiss all commissioners in Rabinal. He received a diploma and that was it.

She does not remember what year the military base moved from INEBE to the road to Pacux. In spite of their presence (at the entry to Pacux), they never intervened when the gangsters assaulted people on the road to Pacux or at the nearby cemetery, something which occurs regularly. More than half a year ago (late 2003), when the military had not handed in the occupied grounds to the municipality yet, a young woman from Pacux (named) was assaulted at the cemetery by the gangsters of Pacux. She lost her cellular phone and golden necklace. In the same year an old woman from Pacux (named) probably seventy years old or more, was raped by (named), close to the military base. It happened in the presence of her grandchild. The military did not intervene.

We are happy because the soldiers have left. Nevertheless we keep having problems because of the youth gangs. They took over the role of the military. In the past the military did the same as the gangsters do now. Many people died and all this has started again with the gangs. We do not know what to do to save their lives. We need a solution to stop this once and for all. We do not want to live through this anymore.

Violence by the Military (confirmed by all three informants):

When the military was still based in Pacux a woman, (named), was raped by soldiers. The woman recognized one of the soldiers and denounced the men at the “gobernación” in Salamá. Salamá then inquired with Rabinal’s mayor and the commissioners. A spy (“*xikin*” - “*oreja*”) from Pacux denounced four men (named) for their participation in the denouncement against the soldiers. The military forced the men, including the husband of the woman who was raped, to join them at the military base. They were tortured: they were battered, forced to drink latrine water and tied to the branch of a gourd tree. Their backs were severely bruised by the punches they had received. (The informants knew of this because they were all present in Pacux at the time).

Several other men, originating from Río Negro, had died after they had been taken from Pacux to the military base, for they never returned: José Iboy Osorio, Simeón Chen López and Pedro Chen López.

About four more women were raped and some had children by the military but never denounced this out of fear. Some were abused of on their way to the town’s centre.

Others, the widows, were forcefully assigned by the commissioners to go and prepare food at the military base, in turn for saving their lives. In the meantime their children were left alone at home. (The women are named). They forcefully stayed at the military base, prepared food and heard people screaming from the bottom of the pits out there. *“Observaban lo que sucedía en el camino, pero no intervenían. Por gusto estaban ellos ahí todavía.”* – *“They just observed what was happening on the road, but did not intervene. It was not of any use that they were there.”*

Some consequences of the militarized past of Pacux (observations by report authors):

In Pacux there are too many unsolved matters from the past, as there are in most parts of Rabinal. One of the more persistent conflicts is derived from the fact that victims and perpetrators live in the same village in some kind of artificial balance. Every time something goes wrong in the community, this balance is upset and generates a polarized debate over who was on which side when. This polarization involves former commissioners as well as former members or supporters of the guerrilla...

Some former inhabitants of Río Negro for instance still don't dare to come back to Pacux. Reconciliation in Pacux seems very hard and an almost impossible thing to dream of.

One of the stories that illustrates this dynamic comes from informants in Pacux:

A guerrilla fighter turns himself in to the military after the massacre period. With the soldiers he goes to some of the places where the people hide. One woman recognizes him and comes out of their hiding place and suffers terrible things before she is killed by the soldiers. The former guerrilla fighter realizes on their way back to Rabinal that he himself might not survive so he makes a run for it and succeeds in his attempt. Later he joins the refugee communities. Years later, after having spent years working in other regions of Guatemala, he comes back to Pacux where at some feast he dies because of a poisoned drink he was offered by the father of the woman that was killed by the soldiers.

4. Problems of the Youth: Experiences in Pacux

Problems of the Youth (observations by report authors): Youth gangs have come to be a growing problem in most of the villages in Rabinal and Cubulco. In Rabinal, the settlement of Pacux is known to be the home of several members of the *“mara.”* Last year (2003) several members of the youth gang raped a 14-year old girl in Pacux. Three of them were captured but it is said that several others participated in this violence and are still free. Several special police operations in Pacux have been conducted, but with no lasting effect on this problem. *“Why don't they look for work, instead of stealing bikes and robbing people?”* is a generally heard complaint. Recognizing that activities and opportunities for the youth are needed, last year some young people in Pacux formed an Alii-Alaa (girl-boy club) to specifically offer an alternative to the younger generation of Pacux.

A male informant from El Naranjo:

It is true that there exist more possibilities for the young generation to receive a good education. They can learn more easily how to read and write, but: where are they going to

find work? Because of this lack of opportunities they enter the youth gangs. Here in the colony, there is the presence of the rival gangs 13 and 18. They fight and sometimes they enter in my neighbor's home who, for instance, got knocked on his head with a gun and got Q15,000 stolen. Still, in the communities like Chicruz, these youth gangs have presence as well. I sometimes wonder what will happen to these young people. There is no future for them. They can read and write, but what good will it do to them if they cannot find a job? I know that life will only get worse for the young generation. If only they would construct factories here, because there are plenty of human resources here.

A female informant from Pacux:

Los de Pacux no opinan porque tienen miedo. Varios han sido amenazados por ellos.” - “The people of Pacux do not express themselves out of fear. Several have been threatened by them (i.e. the youth gangs).”

She has a specific problem with her son when he was forced to become a member of a gang. He went to school at the college closest to Pacux. Trouble began by 2002 when he tried to take back his dictionary from a classmate who had stolen it from him. The boy apparently belonged to a gang, because soon after her son began getting threatened by other youngsters. His family tried to intervene on several occasions, paying bribes to the gang. When it became clear to the gang that he would not be another member, they ordered him to kill a man from Pacux as a means to earn his freedom. They wanted him to kill a man who was publicly criticizing the gang by calling them murderers and thieves. He told his mother who then called her husband in the capital. Finally she went to speak with her brother, and together they decided he was to denounce the gang to the Public Attorney. In the course of these events, and for the boy's safety, he changed schools three times. First, he left home to attend a school on the outskirts of Rabinal, where a gang soon started harassing him as well, since they were closely in touch with the gang of Pacux. The other half of the school year he attended a school up in the mountains. At the end of that school year his uncle urged him to leave Rabinal and continue studying in another, somewhat isolated, department of Guatemala where he is living now...

She is glad she was able to save her son but still fears for his life. When he comes to visit her during school break, Rabinal's gangsters follow his steps closely, in the town centre, in Pacux, making clear to all that they are keeping an eye on him...

After what had happened to her son, she took her other children from school in Pacux and sent them to the “Escuela Regional”, a primary school adjacent to INEBE. The teachers there seem to be in control of their pupils and are very strict as to the abuse of glue and marijuana. Anyone caught is permanently dismissed from school. The parents pay a guardian to check the children's bags and control their behavior on the school grounds...

On June 11, 2004 another boy of the same age (16 years) got shot six times in the face in broad daylight on his way home from INEBE. It is said that his brother wanted to leave the gang and was killed by other members for this...About three families have been threatened by the gangsters. They are forced to pay a certain amount of money or will be killed... She thinks that the gang in Pacux was started because of the absence of sufficient land, work, and money to go and study. In Río Negro, in the past, youngsters spent their days cutting wood, “ocote” and “palma de suate”.

She wants help from the municipality to have the boys “educated” -- have them study. She also thinks the problem of youth gangs are related to a loss of respect in the family and the community. Some parents do not educate their children respectfully and their children turn against them and any of the people surrounding them. This loss of respect is a general phenomenon that even applies to her own children who, she notes, do not properly greet people any more when meeting elders and family on the street.

5. Migration and its effects on household life

Observation by report authors:

Many people from Pacux do not go to the *finca* anymore, but migrate to the capital to the *maquilas* (factories) where they work in the export textile trade. Others work as agents of the national police force or security agents with private security firms. While both men and women migrate for work, the women generally return (or stay) in Pacux with the children. In these households, where the men previously took care of all the agricultural work including gathering and chopping firewood, nowadays the women have to take care of these things.

Female informant from Pacux:

Her husband works in the capital, because there was no land left to grow crops on when the Pacux-committee distributed the communal land amongst the inhabitants of Pacux. He left about ten years ago, by 1996, to go and find a job outside Rabinal. First he worked five years up North, in Playa Grande. Then he moved to the capital. In total he changed jobs only twice. He is currently working as a cleaning man at the Ministry at Campo Marte, but even so his wage does not cover all their needs. She does not know when her husband can retire and return to Pacux; they do not have any date set.

She is a housewife who raises their seven children. Her daughter of seventeen helps her in the household in the afternoons, when she has returned from college (washes clothes and makes tortillas). She knows how to weave napkins and belts but has trouble selling them because of the intense competition from women in Rabinal. The belts she weaves are for a woman from Pacux who buys them from her to sell again. Her children sometimes sell snacks (“dobladas” and “chicharrines”) after school. During winter holiday she sells a kind of ice-lollies (“topohigios”, “chocobananos”, “chocomelones”, “chocosandía”) at her house. She usually does not earn more than ten Quetzales a day with these. Because of her husband’s absence it is she who goes to look for firewood. “*Yo cargo todos mis hijos*” – “*It is me who is in charge of all our children.*” She is the only one in charge of their seven children and thinks it tiring.

She often feels sad because of her husband’s absence. When he is on leave, every fortnight, and in Pacux he helps her out a lot with their children. She often fears for his life on his way to the capital because of the gangsters that demand money in turn for the passengers’ lives. About two months ago a companion of her husband was held up at the bus station heading for Rabinal and asked for his wage. The man had not received it yet though and handed in the money he had set aside for traveling (25Q).

She wishes for her children to finish their studies and find a decent job. She does not want them to suffer the way she does for not having studied enough and found a job to support her family. She often tells her children this, and is proud to note that her eldest daughter will finish her Teacher's Training next year and has decided to continue studying more. She thinks it important that her children study so they become intelligent and do not seek problems, as she thinks happened to those who got involved in a gang.

6. On life today...

Male informant, Colonia Rosario Italia:

Before when we were living in Pueblo Viejo, there was a cave, a big large cave of 12 meters deep and 8 meters high. It was situated right in front of the Campana Mountain. In it was a big 3 meters high statue of San Antonio, hence the cave was called "la cueva de San Antonio"-- sculpted out of the rocks. Every 13th of June we celebrated its feast there, as it is the feast of San Antonio. But as the cave stood in the way of the dam, they blew it up and we were not able to recuperate the statue. Nowadays we are not able to celebrate the San Antonio feast at that place anymore...

... In Pueblo Viejo itself were houses of our ancestors where people came to burn candles and make offerings. Other religious feasts were the day of the Holy Cross (3rd of May), when we all went to the chapel in Los Encuentros and looked at the dances that came from Río Negro. During the feast of San Isidro (15th of May) we went to celebrate in Agua Fría, but now Agua Fría does not exist anymore. And the 24th of December we celebrated Santa Ana, but its chapel remains under the water of the dam now. The First of November, the communities of El Zapote, Santa Ana, Puente Viejo, Pueblo Viejo and Santa Ana all went to celebrate the All Saints' and All Souls' Day at the cemetery of Santa Ana. The cemetery is not really flooded, but it is very hard for us to get to it...

Male informant, Colonia El Naranjo, Cubulco: *Life before was better, because we could sow our fields, now we have to pay and buy everything we need here. Before the dam we could grow maize on the river banks, we had a lot of fruit trees (mangos, macheton, ocote). Now we are suffering because all that is lost... Before, we went to pray at the site of Pakuño in San Juan Las Vegas for the day of the Holy Cross. There were also archaeological sites in Panxik, Chicruz, Tierra Negra and Pueblo Viejo-Cawinal. These sites were holy to us, because long ago these were the places of our ancestors, our grandfathers and grandmothers, the Mayan people. Before, we celebrated the day of the Holy Cross with the Costeño dance because we wanted to offer this to ask for rain and water. Now, in the El Naranjo colony, there are no more dances left. Groups come to dance here during the day of the Holy Cross, but they are from other places...*

Male informant, Pacux: A few days before and during the Day of the Holy Cross ("Nimaq'ij Kurus" – "Día de la Cruz"), the first, second and third of May, we would dance the Deer Dance (*Xajooj Keej*) above Río Negro, in the woods. We would rise at two in the morning and walk two hours to dance at a place by Chitucan. We would dance at different sacred places, such as Los Encuentros. Before dancing, the elderly would do a religious ceremony for the protection of the dancers and to invoke the ancestors, those who had danced

before them. *We burned candles, offered spirits, chocolate, sugar, incense and bread. Once a year, when the rains come and the animals start proliferating again.*⁵

Male informant, Pacux: *“I think it very important for our youngsters to learn our traditions as well for these are ours, they have been passed on by our ancestors. Today this does not exist any longer. It is extinct. It was extinguished there, in Río Negro.”*

Male informant, Pacux: It does not make sense to teach his remaining sons the former hunting and fishing techniques because the animals the hunted do not exist in the Pacux area. His children that grew up in Río Negro were not allowed to help fishing because they were still too young and could drown. They mainly looked on. While his father taught him how to make palm mats, tow bags and grow a milpa, and he taught both his sons to work the milpa, he did not teach his surviving children the weaving of palm mats because the required trees do not grow around Pacux. His daughter learned the weaving of women’s belts with other people. He thinks their traditional knowledge is bound to be lost because of the lack of resources, but also because of changing beliefs. Nearly all his children and his wife have changed their Catholic religion to one of the different evangelical sects in the area: *“Ax taj xa rumaa la kape tan chik ri k’ax.”* - *“They do not want the violence to return. They do not want the killings to start again, they say. Just because of sticking to our traditions the killings may come back, they claim. They do not want this to happen anymore.”*

⁵ The *Memorial de Sololá*, a colonial kaqchikel indigenous text, mentions the site of Los Encuentros and relates it to the deer dance:

*oq xilitaj chi k’a Ajnimpoqom
Ajraxch’ich’
pa Tzaqtzuy rub’i juyu
tantusa wi ruwach
rikan ronojel Poqoma
tantib’an
xajoj xman kej
xman tz’ikin
raal
k’aqol kej
xuq’ tzara
xa xere rikan
Ajraxch’ich’
Ajnimpoqom ri’*

luego se encontraron con los de Gran Poqom
los de Rax Ch’ich’
en un lugar llamado Tzaqtzuy
todos los principales de los linajes
de los Poqom se iban presentándose
estaban representando
los bailes de la hembra del joven venado
de la pajarita
de poner lazo
de flechar al venado
y de tender redes y poner liga
así, pues, eran los principales de linaje
de los de Rax Ch’ich’
de los de Gran Poqom

“And then those of the Great Poqom (Federation) and those of Rax Ch’ich’ met at a place called Tzaqtzuy. All the principals of the Poqom lineages were presenting the dances of the young female deer and of the female parrot. They showed how to hunt and capture a deer with bows and arrows. Such were the principals of the lineage of Rax Ch’ich’ and of the Great Poqom” (Mengin 1952: folio 13r, cited in Janssens and van Akkeren, 2004: 41). Rax Ch’ich’ is the classic Mayan name of the site of Los Encuentros, where until before the dam, the Río Negro people went to dance the deer dance during the days of the Holy Cross. (Rax Ch’ich’ - the place of green metal - nowadays is still known as *pa ya’ ch’ich’* - the place of the metal water - and it is known as the only place in the region where the French found golden archaeological objects). Later, in Mayan history, the importance of Rax Ch’ich’ was substituted by the site of Cawinal, which plays a mayor role in Mayan postclassical times. Thus, there are clear and direct links between (post) classical times and actual Maya Achi identity: what they used to do a thousand years ago, namely representing the deer dance as a ritual rain offer, they continued doing so until twenty-five years ago. This means that the dam basin not only flooded the physical archaeological site, but also damaged the lifelong cultural heritage that is alive in the identity of the indigenous people in the area.

Male informant, Pacux: He wants to learn the Achi prayers spoken during all their traditional ceremonies. After he had returned to live in Río Negro, eleven years ago, there were no elderly around that knew those prayers. Recently, this year, after his wife's sudden death, he returned with his children to Pacux and he now hopes to learn the prayer with the help of the elders. He learned to make fishing nets from a companion who had learned it when in prison. His father did not know the making of nets, but taught him how to plait fishing rods with agave fibres or the threads of synthetic sacks. He also taught him to plait tow bags and nets from agave fibres to carry items on the head. He learned about the use of medicinal plants with his father in Río Negro before the time of the massacres and when on the run for the military with Medicos Descalzos (Ixcán). These plants are still available but people nowadays have less faith in its medical powers and therefore do not use them anymore. He also learned to weave palm mats with both his parents. There was no time left to learn to weave other palm products such as mattresses (*sukater*) and hats because of the violence that intervened. His children are not interested in learning their parents' artisanry. His daughters learned to weave with other people instead, and learned to crochet purses and handbags. *"The youngster's life is different from ours. They attend school but they do not respect anymore. (...) Nevertheless, I want my children to study so they will have more opportunities to help their people in the communities."*

Female informant, Pajales Quiché:

"Before, there was respect! The children would rise and greet the elders ritually. Now they don't do that anymore."

Female informant, colonia El Naranjo

"There is no clay here anymore. My father and my grandmother used to fabricate things out of clay such as pots, comales (to bake tortillas on), tiles and so. But they did not show me how to do this because they did not find clay anymore."

Male informant, El Naranjo colony:

Here we buy everything and pay for everything. And there is a lot of poverty here. There are families that had to sell their houses out of necessity at a very cheap price, because someone in the family fell ill and they needed the money for medicine. When you leave the place where you were born and grew up, one has to adapt himself to his new environment. The food and alimentation here is different for instance, because we have to buy everything. In the field, there are several alternatives: edible wildlife such as tepezcuintle, tacuacin, cochemonte etc. How easy it even was to grow chicken and pigs. Nowadays it is not that easy anymore as you need money to make a fence and to vaccinate the animals. You have to be much more careful here... Nowadays, all these traditions are extinguishing. People are converting themselves and joining evangelicals sects, because they simply don't know where they could go to. Nowadays everything here is without control. When they started to fill the dam basin, the evangelical sects started being organized. It's a lot of divisionism. This wasn't so before! People were more united, now they are much more divided... What I would ask to INDE representatives is that they give us good and productive land. They gave us three manzanas of poor and unproductive land. What we need is good land and workshops on how to get the most out of it.

Attachment B: Survey Instrument

Part One: LIFE BEFORE THE DAM.

Household Survey

Interviewer: _____ Date _____

EXPLANATION: The purpose of this survey is to identify the many ways that life changed after the building of Chixoy Dam. In the first part of the survey we ask questions about household conditions, critical resources, and well-being before the dam was built. In the second part of the survey we examine current conditions. We are asking these questions of a number of families living in four villages with the idea that answers will suggest the kinds of changes and problems faced by many of the dam-affected families. These answers will be used in a report on the legacy issues of the Chixoy Dam. In part One, we begin with questions to the older people in your family, the men and women who remember what life was like in the mid-1970s, just before the 1976 earthquake.

Name (head of household): _____

Current residence: _____

Residence in 1976: _____

1. In your old house, the walls were made of: a). wood b). adobe c). caña d). other _____
2. What materials were used for the roof? a). palm thatch b). tin c). tile d). other: _____
3. How many people lived in the home _____. How were these people related to you? (circle all that apply): a). parent b). grandparent c). spouse d). child e). grandchildren f). cousins g). friends
4. Where did your family sleep? : a). In one room? b). Separate rooms under one roof? c). Separate buildings near main house??
5. Was there a place outside of the house to cook food? Yes No
6. In the area around your home what kind of animals did you have? (how many?) a). chicken _____ b). pigs _____ c). goats _____ d). cow _____ e). donkey _____ f). horse _____ g). other (list and indicate how many): _____
7. Did you have a garden near the house? Yes No What did you grow? a). corn b). beans c). tomato d). chili e). herbs g). other: (list all) _____
8. Did you use fertilizer in your garden? Yes No
If yes: a). animal dung b). fish c). purchased fertilizer
9. What kind of fruit trees did you plant or care for? (list all) _____
10. In raising animals and growing food in the area around your home:
Did you produce a surplus to trade? Yes No Did you produce a surplus to sell? Yes No
What did you produce for trade or sale? (list): _____
11. In the area around your home, what materials were you able to find to make household and market crafts and tools? Did you find material to make: a). baskets b). pottery c). wood to build houses and other structures d). roof thatch e). fire wood f). other: (list) _____

12. How often did you leave your home to collect firewood? a). daily b). several times a week c). once a week d). other_____

13. How much time did it take for you to collect wood for the cooking fire?

14. Did you harvest medicinal plants from the forests? Yes No
If yes, what kinds? (list)_____

15. In the forest, did you gather honey and other kinds of foods? a). honey b).mushrooms c).berries d). other:_____

16. Did you hunt for birds, pigs and other animals? Yes No
If yes, what kinds of animals? (list): _____

17. Did you harvest wood and other materials from the forest to build homes ad other structures:
Yes No
If yes, what kinds of trees and plants were used, were they easy to find?

18. Did you harvest wood and other materials from the forest to build boats? Yes No
If yes, what kinds of trees and plants were used?:

19. Did you harvest materials from the forest to make fishing nets and other equipment? Yes No
If yes, what plants/trees?:

20. Did you collect palm leaves for your family use? Yes No
To sell? Yes No

21. What other goods from the forest did you trade or sell? (circle): a). Ocote pine torches b). firewood
c). timber for housing d). other:

22. Were there areas in the forests that were sacred? (circle): Yes No In what way? (describe)

23. Did you use the river for (circle all that apply): a). drinking water b). bathing c). water for your garden d). irrigate your milpa? e). to swim and play f). to catch fish for your family g). to catch fish for the market?

24. What kinds of fish did the river provide? (list):

25. What kinds of fish were found in great abundance? (list):

26. What kinds of fish were found all year round? (list):

27. What kind of fish were found during certain seasons (when?) (list):

28. What equipment did you use to catch fish (circle) a). hook and line b). nets c). spears d). traps e). poison f) boats g). other (list):

29. When you caught more than you could eat, what did you do with the surplus? a). salted and stored b). live storage in barrel c). live storage in pond or river d). gave away e). traded f) sold

30. If you traded or sold fish, how many times each month did you do this? _____

What did you get in exchange? Trade: _____

Sale _____

31. What other kinds of food did the river provide? (circle): a). migratory birds b). bird eggs c). turtles d). frogs e). shellfish f). other (list):

32. Were there areas on the river where you collected reeds? Yes No

If yes, how were they used: _____

33. Were there areas on the river where you found clay that was good for pottery? Yes No

34. Were there times when there was no water to drink or use in the house? Yes No

If yes: how often? _____

What did you do to get water? _____

35. Were there times when there was no water for your garden? Yes No

If yes: how often? _____

What did you do to get water? _____

36. Were there times when there was no water for your milpa? Yes No

If yes: how often? _____

37. Were there times when you drank the river water and it made you sick? Yes No

If yes, was this: a). common b). unusual c). everyone was sick d). only children and old people were sick

38. Were there places on the river that were sacred? Where ceremonies were held? Yes No

If yes, describe: _____

39. How much land did your family have to work?

40. How far was your milpa from your home (how much time did it take to get to your milpa)?

41. What did you plant? a). corn b). beans c). pumpkin d). other: _____

42. How many harvests each year? a). one b). two

43. Did you fertilize your land? a). animal dung b). fish c). purchased fertilizer

44. How did you water your milpa? a). rain fed b). irrigation

45. When you harvested, did you have a surplus? a). to trade? b). to sell?

46. Did you share your surplus with people in other villages? Yes No
 What did you receive in exchange? _____
47. In addition to growing food, what other ways did you use the milpa? a). food for livestock
 b). fuel c). other _____
48. Did you hire help to work on your land? Yes No
49. Were you able to grow, hunt, fish, and trade for all you family food needs each year? Yes No
50. If you needed to buy additional food, what kind of food did you buy? a). corn b). beans c).
 sugar d). avocado e). boj f). coffee g). other (list):

51. How did you get Quetzales to buy food? a). sold harvest in market b). sold fish in market c). sold
 handicrafts d). worked for family or friends e). worked on nearby fincas f). traveled to work on fincas
 g). other: _____
52. If you or people in your household traveled to work on fincas, did your whole family go? Yes No
 What crops did the finca produce? a). cotton b). coffee c). cane
 d). other: _____
 Where did you go? _____ How long did you stay? _____
 How often did you go? Every year Every other year Other: _____
53. How many meals did your family eat each day? a). one b). two c). three
54. How many times did you have meat (chicken, pork, beef) with your meal? a). all meals
 b). at least once a day c). several times a week d). once a week e). a few times each month
55. How many times did you have fish with your meal? a). all meals b). at least once a day c).
 several times a week d). once a week e). a few times each month
56. Were there times when you had no food and no money to buy food? Yes No
 What did you do to get help? _____
57. What else, besides food, did you use Quetzales for? a). soap b). thread, wool to weave c). cloth
 d). medicine e). metal tools and cook pots e). taxes f). other: _____

PART TWO: Current Conditions Household Survey

Interviewer: _____

Date _____

EXPLANATION: The purpose of this survey is to identify the many ways that life changed after the building of Chixoy Dam. In the first part of the survey we ask questions about household conditions, critical resources, and well-being before the dam is built. In the second part of the survey we examine current conditions. We are asking these questions of a number of families living in four villages with the idea that answers will suggest the kinds of changes and problems faced by many of the dam-affected families. These answers will be used in a report on the legacy issues of the Chixoy Dam. These questions explore current conditions.

Name (head of household): _____

Current residence: _____

Residence in 1976: _____

1. In your current home the walls are made of: a). wood b). adobe c). caña d). other:

2. What materials are used for the roof? a). palm thatch b). tin c). tile d). other:

3. How many people live in the home _____. How are these people related to you? (circle all that apply): a). parent b). grandparent c). spouse d). child e). grandchildren f). cousins g). friends

4. Where does your family sleep? : a). In one room? b). Separate rooms under one roof? c). Separate buildings near main house?

5. To cook food, do you use a wood fire? Yes No
If yes, is there a place outside of the house to cook? Yes No

6. What kind of animals do you have in and around your home? (how many?) a). chicken _____
b). pigs _____ c). goats _____ d). cow _____ e). donkey _____ f). horse _____
g). other (list and indicate how many): _____

7. Do you have a garden outside your house? Yes No
What do you grow? a). corn b). beans c). tomato d). chili e). herbs g). other: (list all) _____

8. Do you use fertilizer in your garden? Yes No
If yes: a). animal dung b). fish c). purchased fertilizer

9. What kind of fruit trees do you plant or care for? (list all) _____

10. In raising animals and growing food in the area around your home, do you produce a surplus to trade? Yes
No Do you produce a surplus to sell? Yes No
What do you produce for trade or sale? (list): _____

11. In the area around your home, can you find materials to make household and market crafts and tools? Do you find material to make: a). baskets b). pottery c). wood to build houses and other structures d). roof thatch e). fire wood f). other: (list)

12. How often do you leave your home to collect firewood? a). daily b). several times a week c). once a week d). other _____

13. How much time does it take for you to collect wood for the cooking fire? _____

14. Do you harvest medicinal plants from the forests? Yes No If yes, what kinds? (list):

15. Are there places where you gather wild foods? a). honey b). mushrooms c). berries
d). other: _____

16. Do you hunt for birds, pigs and other animals? Yes No
What kinds of animals? (list):
How far do you travel to hunt for game? _____

17. Do you harvest wood and other materials from the forest to build homes and other structures:
Yes No If yes, what kinds of trees and plants are used, are they easy to find?

18. Can you find and harvest wood and other materials to build boats? Yes No
If yes, what kinds of trees and plants are used?: _____

19. Can you find and harvest materials to make fishing nets and other equipment? Yes No
If yes, what plants/trees?: _____

20. Do you collect palm leaves for your family use? Yes No To sell? Yes No

21. What other goods from the forest can you find, harvest, trade or sell? a). Ocote pine torches
b). firewood c). timber for housing d). other: _____

22. Do you use the river for (circle all that apply): a). drinking water b). bathing
c). water for your garden d). irrigate your milpa? e). to swim and play f). catch fish for your family g).
to catch fish for the market?

23. What kinds of fish does the river provide?

24. What kinds of river fish are found in great abundance? (list):

25. What kinds of river fish are found all year round? (list):

26. What kind of river fish are found during certain seasons (when?) (list):

27. What kinds of reservoir fish are found? _____
Are any of these fish in great abundance? _____

To fish in the reservoir, what equipment is needed? A) boat b). nets c) engine d). gas
e). other _____ Do anyone in your household fish in the reservoir? Yes No

28. What equipment do you have and use to catch river or reservoir fish (circle) a). hook and line b). nets
c). spears d). traps e). fish poison f) boats g). other (list):

29. If you catch more than you can eat, what do you do with the surplus? a). salt it and store
b). live storage in barrel c). live storage in pond or river d). gave away e). trade f) sell

30. If you trade or sell fish, how many times each month do you do this? _____
What do you get in exchange? Trade: _____ Sell _____

31. What other kinds of food does the river provide: a). migratory birds b). bird eggs c). turtles d). frogs e). shellfish f). other (list): _____

32. Are there areas on the river where you collected reeds? Yes No If yes, how are they used:

33. Are there areas on the river where you find clay that is good for pottery? Yes No

34. Are there times when there is no water to drink or use in the house? Yes No
If yes: how often? _____ What do you do to get water? _____

35. Are there times when there is no water for your garden? Yes No
If yes: how often? _____ What do you do to get water? _____

36. Are there times when there is no water for your milpa? Yes No If yes: how often? _____

37. Are there times when you drank the river water and it made you sick? Yes No
If yes, is this: a). common b). unusual c). everyone gets sick d). only children and old people get sick

38. Where are your sacred sites? _____
Can you easily visit and use these sites?: _____

39. How much land does your family have to work?

40. How far is your milpa from your home (how much time does it take to get to your milpa)?

41. What do you plant? a). corn b). beans c). pumpkin d). other:

42. How many harvests each year? a). one b). two

43. Do you fertilize your land? a). animal dung b). fish c). purchased fertilizer
If you purchase fertilizer, how much do you spend each year to buy fertilizer?

44. How do you water your milpa? a). rain fed b). irrigation

45. When you harvest, do you have a surplus? a). to trade? b). to sell?

46. Do you share your surplus with people in other villages? Yes No
What do you receive in exchange? _____

47. In addition to growing food, what other ways do you use the milpa? a). food for livestock b). fuel
c). other _____

48. Do you hire help to work on your land? Yes No

49. Are you able to grow, hunt, fish, and trade for all you family food needs each year? Yes No

50. If you buy additional food, what kind of food do you buy? a). corn b). beans c). sugar
d). avocado e). boj f). coffee g). other (list):

51. How do you get Quetzales to buy food? a). sell harvest in market b). sell fish in market c). sell handicrafts
d). work for friends e). work on nearby fincas f). travel to work on fincas
g). other: _____

52. If you or people in your household travel to work on fincas, does your whole family go? Yes No

What crops does the finca produce? a). cotton b). coffee c). cane d). other:

Where do you go? _____

How long do you stay? _____

How often do you go? Every year Every other year Other:

53. How many meals does your family eat each day? a). one b). two c). three

54. How many times do you have meat (chicken, pork, beef) with your meal? a). all meals
b). at least once a day c). several times a week d). once a week e). a few times each month

55. How many times do you have fish with your meal? a). all meals
b). at least once a day c). several times a week d). once a week e). a few times each month

56. Are there times when you have no food and no money to buy food? Yes No

What do you do to get help? _____

How many times each week do you feel hungry and there is no food to eat?

A) every day b). several times each week c). once a week d) a few times each year

e) other: _____

57. Do the children in this house receive meals at school? Yes No

If yes, how many meals each day are provided by school feeding program? _____

How many days each week? _____

When the children receive food at school, do they also receive eat meals at home?

How many meals? _____

When children are not attending school, do they receive the same number of meals each day at home?

58. What else, besides food, do you use Quetzales for? a). soap b). thread, wool to weave
c). cloth d). medicine e). metal tools and cook pots e). taxes f). other:

59. Do you have electricity in your home? Yes No

If yes, how many hours each day is it available? _____

How many days each month do you have no electricity? _____

60. Do you have drinking water?

a) Piped into your home b). a tap outside the home c). a tap in walking distance

61. Do you purchase potable water? Yes No

If yes, how many gallons a week? _____ How much does those cost? _____

62. How many hours per day is water available?

63. How many days per month is there no water?

64. Are your household sanitary needs met by

a) latrine b). septic system c) sewage system

65. Is there a fixed telephone in the house? Yes No

A fixed telephone in the community? Yes No

References

- Aguirre, Monti. 2004. "The Chixoy Dam Destroyed Our Lives". Human Rights Dialogue, Carnegie Council, Winter 2004. <http://www.carnegiecouncil.org/viewMedia.php/prmTemplateID/8/prmID/4456>
- Aguirre, Monti, Annie Bird, Jaroslava Colajacomo, Barbara Rose Johnston, Cristobal Osorio Sanchez. 2004. "Reparations Struggles – Chixoy Dam Legacy Issues, Guatemala." Dams and Development Forum Issue-Based Workshop: Addressing Existing Dams, Nairobi, Kenya. June 14-15, 2004.
- American Anthropological Association. 1998. Code of Ethics. <http://www.aaanet.org/committees/ethics/ethcode.htm>
- Burdge, Rabel J. 2004. A Community Guide to Social Impact Assessment: 3rd Edition Middleton, WI: Social Ecology Press.
- Burdge, Rabel J. 2004. The Concepts, Process and Methods of Social Impact Assessment. Middleton, WI: Social Ecology Press.
- Carmack, Robert (editor). 1988. Harvest of Violence: The Maya Indians and the Guatemalan Crisis. Norman: The University of Oklahoma Press.
- Cernea, Michael and Christopher McDowell, editors. 2000. Risks and Reconstruction: Experiences of Resettlers and Refugees. Report 20358. Washington DC: World Bank.
- CEH [Comisión para el Esclarecimiento Histórico]. 1999. *Informe de la Comisión para el Esclarecimiento Histórico, Guatemala: Memoria del silencio* -Guatemala: Oficina de Servicios para Proyectos de las Naciones Unidas, 1999. 12 vol. See, *Caso ilustrativo número 10: Masacre y eliminación de la comunidad de Río Negro*, Capítulo VI, Casos ilustrativos – Anexo 1, Volumen 1:48. Also, in English: *Guatemala: Memory of Silence. Report of the Historical Clarification Commission*. Washington DC: American Association for the Advancement of Science. <http://shr.aas.org/guatemala/ceh/report/english/toc.html>.
- Dill, Kathleen. 2004. Mediated Pasts, Negotiated Futures: Human Rights and Social Reconstruction in a Maya Community. PhD. Dissertation. Department of Anthropology, University of California, Davis, 2004.
- Douzant Rosenfeld, Denise. 1988. "La valee du Río Chixoy et la arrage de Pueblo Viejo: geographie et problemes de la population déplacée par le lac de retenure (Baja Verapaz)." In *La Vallee moyenne du Río Chixoy (Guatemala)*, 6: Occupation prehispanique et problemes actuels edited by Alain Ichon. CNRS, Institut d'Ethnologie & Editorial Piedra. Santa, Paris & Guatemala.
- Ervin, Alexander M. 2000. Applied Anthropology: Tools and Perspectives for Contemporary Practice. Toronto: Allyn and Bacon.
- Gaítan, Gustavo Adolfo Gaítan Sanchez. 1979. Las Comunidades de la Cuenca del Rio Negro y Chixoy: Resultados de la encuesta socioeconomica levanyada en parajes, caserios, fincas y aldeas se construye el embalse de la hidroelectrica del Proyecto Pueblo Viejo-Quixal. Comite de Reconstruccion Nacional. Informe presentado por el Dr. Gustavo Adolfo Gaítan Sanchez. Guatemala, Febrero de 1978.
- Goodland, Robert and Richard Pollard. 1974. Chixoy Development Project: Environmental Impact Reconnaissance. The Cary Arboretum of the New York Botanical Garden, Environmental Protection Program.
- Green, Linda. 1999. Fear as a Way of Life: Mayan Widows in Rural Guatemala. New York: Columbia University Press.

- Janssens, Bert and Ruud van Akkeren. 2004. Xajooj Keej – El Baile del Venado de Rabinal. Rabinal, Guatemala: Museo Comunitario Rabinal Achi.
- Johnston, Barbara Rose. 2004. "Reparations for Dam Displaced Communities? Report from the Chixoy Dam Legacy Issues Meeting, July 23, 2003, Pacux, Guatemala" in *Capitalism, Nature, Socialism*, Volume 15(1) 113-119, March 2004.
- Johnston, Barbara Rose. 2003a. "Reparations for Dam Displaced Communities?" *Anthropology News*. March 2003. <http://www.aaanet.org/press/an/0311pa-news.htm>.
- Johnston, Barbara Rose. 2003b. "Notes from the Field: Guatemalan Community Struggles with Chixoy Dam Legacy of Violence, Forced Resettlement" in the *American Association for the Advancement of Science Report on Science and Human Rights*, Fall/Winter 2003 Vol XXIII, No. 3.
- Johnston, Barbara Rose, and Holly M. Barker. 2001. "Hardships Endured by the People of Rongelap as a Result of the U.S. Nuclear Weapons Testing Program and Related Biomedical Research." Expert Witness Report. Majuro, RMI: Republic of the Marshall Islands Nuclear Claims Tribunal. September 2001.
- Johnston, Barbara Rose, and Holly M. Barker. 1999. "The Rongelap Property Damage Claims Study: Efforts to Seek Redress for Nuclear Contamination and Loss of a Way of Life." Expert Witness Report. Majuro, RMI: Republic of the Marshall Islands Nuclear Claims Tribunal. November 1999.
- Levy, Karen. 2002. *Life Submerged: The Environmental Impacts of Guatemala's Chixoy Dam*. Berkeley: International Rivers Network. <http://www.irm.org/programs/chixoy/index.asp?id=0204.chixoyreport.html>. April 2002.
- Manz, Beatriz. 2004. *Paradise in Ashes: A Guatemalan Journey of Courage, Terror and Hope*. Berkeley, CA: The University of California Press.
- Montejo, Victor. 1987. *Testimony: Death of a Guatemalan Village*. Willimantic, CT: Curbstone Press.
- Robinson, W. Courtland. 2003. "Risks and Rights: The Causes, Consequences, and Challenges of Development-Induced Displacement." Occasional Paper. The Brookings Institution-SAIS Project on Internal Displacement. May 2003.
- Sanford, Victoria. 2003. *Buried Secrets: Truth and Human Rights in Guatemala*. New York, London: Palgrave MacMillan.
- Society for Applied Anthropology. N.D. Ethical and Professional Responsibilities. Professional code of ethics. <http://www.sfaa.net/sfaaethic.html>
- U.S. Environmental Protection Agency, National Environmental Justice Advisory Council. 2000. *Guide on Consultation and Collaboration with Indian Tribal Governments and the Public Participation of Indigenous Groups and Tribal Members in Environmental Decision Making*. http://www.lm.doe.gov/env_justice/pdf/ips_consultation_guide.pdf November 22, 2000.
- U.S. Environmental Protection Agency, Office of Water. 2003. *Community Culture and the Environment: A Guide to Understanding a Sense of Place*. EPA 842-B-01-003. Washington DC: US Government Printing Office. 2002.
- World Bank. 2003. *Guatemala Poverty Assessment*. Poverty Reduction and Economic Management Unit, Human Development Sector Management Unit, Latin America and Caribbean Region. Report No. 24221-GU. Washington DC: World Bank. February 20, 2003.
- World Commission on Dams. 2000. *Dams and Development: A New Framework for Decision-Making*. The Report of the World Commission on Dams. London: Earthscan Publishers. <http://www.dams.org/report/>.