



Global Mercury Project

Project EG/GLO/01/G34:

Removal of Barriers to Introduction of Cleaner Artisanal Gold Mining and Extraction Technologies



REPORT IN REFERENCE TO SÃO CHICO AND CREPURIZINHO MINING SITES

by

Armin Mathis

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Trip Schedule (I)

- Mon. 9/06 Belém – **ITB**
Environment and Mining Secretariat, Itaituba City Hall
- Project and work plan presentation
D'Gold. Mr. Dirceu Frederico Sobrinho (member of the AMOT)
- Work plan presentation, request for logistical and support for the stay in Crepurizinho and São Chico.
Mr. Waldomiro - (AMOT member, one of São Chico's local leaderships)
- Interview on the history and present situation of the mining site.
- Tues. 10/06 ITB – Crepurizão – **Crepurizinho**
Initial survey on local geography to design the village map
Interviews with local FNS representatives
Informal meetings with the local military police. PM – PA
Informal meetings with village gold buyers and dealers
Interview with José Laurêncio de Oliveira – Zé Baiano (Village's ex – president and mining site owner)
- Wed. 11/06 Visit to labor fronts around Crepurizinho village with Mr. Zé Baiano.
Meeting with teachers of local basic school in Crepurizinho.
- Project presentation and request for cooperation in the census
- Thur. 12/06 Crepurizinho – **São Chico**
Informal meetings with gold dealers and buyers.
Census
- Fri 13/06 Census
Visit to mining sites close to the village – interviewing miners
- Sat 14/06 Census
Visit to mining sites – with Carlos Henrique Gonçalves (Juca) – interviewing miners
Visit to mining sites - interviewing miners
Closing Census
Interviewing miners
- Sun 15/06 São Chico – **ITB**
- Mon. 16/06 ITB – **Belém**

Trip Schedule (II)

Tue 01/07 Belém – **ITB**

Meeting with Mr. Ivo Lubrinna (AMOT President) and Mr. Elias Leal Moraes (SEMMA – ITB).

São Chico Report was presented. The results of the meeting were registered in a document sent to the National Project Coordination. The National Project Coordination agreed to carry out another trip in order to choose areas alternative to São Chico, due to the decadence of the mining activity in this area.

Wed 02/07 **Itaituba**

Trip preparations

Thur. 03/07 Itaituba – **Jardim do Ouro** (Serabim Mining) [S 06° 19'15.4" W 55° 47'15.4"]

This company (Australian capital) has worked in the Palito mining site. Their license (proc. 850006/02) covers an area totalling 7.920ha. This area was purchased from RTZ, which had carried out research there. The company works with cyaniding in open tanks (CIP), processing a *mix* of the mines' rejects with primary rocks previously extracted by miners. Present production is at 1 kg Au per day, but it is predicted to be raised to 2 kg/Au per day by the end of the year.

Jardim do Ouro – **São Chico** [landing track S 06° 24'51.7" W 55° 59'24.2"]

Group introduction to local leaderships. At São Chico's visit, our colleagues were able to confirm all the data present in my report (little mining activity, physical conditions of potential area). Bernhard Peregovich and Roosevelt also made a survey on the village's logistical conditions.

São Chico - **Mining site Fazenda Marrom** [track S 07° 53'55.8" W 56° 40'54.3"]

The mining site has aerial access and presented intense activity in 2001. It is composed by two great work fronts around the river basin. Fifty people live at the work front called Planalto [S 07° 54'08.1" W 56° 41'33.1"]. The works are concentrated in virgin areas, and the extraction cycle totals to 30 to 45 days with costs of production around 500 g Au. We were informed that currently, four (4) pairs of machines are working, each one operated by a team of five (5) people. In the second work front (track with canteen) there is about 50 small houses, that indicate a population of 150 to 200 people. According to the manager of the canteen, there are 10 or 12 pairs of machines working in the area. Due to exhaustion of areas closer to the airstrip, there is a movement along the river to areas still unworked.

Fazenda Marrom Mining Site – **Fazenda São Raimundo** [S 07° 38'02.3" W 56° 44'28.6"]

The farm owned by Mr. Tomáz. The proprietor has 106 employees, using the majority in farming activities. Currently the mining site owner possesses 8 pairs of machines working in two distinct areas. The first one is located next to the beginning of the airstrip [S 07° 37'20.4" W 56° 45'20.9"], the extraction is concentrated in the unworked areas that had been covered by rejects in previous extraction processes. The second area is located 15 minutes away from the first area (by car). Other four pairs of machines extracted in previously unexploited areas (riverbed). In the same area three pairs of machines that belong to Mr. Moreira are also working. His teams are made of 5 people and have the right to 25% of the gold production. 38 people inhabit the second area. This mining site has the characteristics of a closed *garimpo*; (one may enter only with the permission of the owner, monopoly of transport and commerce, rigid discipline imposed by the owner). It is distinct from other sites because of the farm's center village good infrastructure (power running 24h, a tarred square, wide landing track), becoming an exception among the region's mining sites.

Fri 04/07

Fazenda São Raimundo Site – **Crepurizão** [S 06° 49'13.6" W 56° 50'41.0"]

Contact with local commerce in order to verify rent conditions and purchase necessary project equipment.

Crepurizão – **Crepurizinho** [S 06° 50'02.6" W 56° 35'01.4"]

The project was presented to Mr. Luis Preto, President of the Community. We agreed on two possible areas of mineral prospecting: Tolentino [S 6 47'51.4 "W 56 36'22.5"] and Sta. Terezinha [S 56 47'00.7 "W 40'02.6"]. I had previously visited both areas during the first trip. In Tolentino, there is a "slope" (equipment brought from Poconé-MT, with a ball mill and centrifugal machines) and gold diggers working; in Sta. Terezinha, property of Mr. Luís Preto, there is primary gold extraction (shafts) and, inside of a stretch of about 1500m, teams working in "*repassagem*" (second mining of a previously exploited area, mining for a second time the same area,) and virgin areas. Throughout the conversation, we justified to the leaderships the delay in the work schedule (remembering the agreement with the local teachers to carry out the village's census during that week). As to logistic support for the project, they placed an unoccupied house at our disposal and the school (interesting solution, since the reforms to be carried

out by the project would work as a real contribution for the community and a good acceptance of the project by the community).

Crepurizinho – **Itaituba**

When back to Itaituba, it was carried out a meeting to exchange impressions from the trip. This meeting also had the participation of Mr. Dirceu Federico Sobrinho (AMOT) and Mr. Alberto Rogério da Silva from the national coordination (by telephone). The results of this meeting were:

- AMOT is against the inclusion of São Chico in the project
- Crepurizinho will be kept, with two areas of extraction to be researched by me, that may be used for the environmental and technical work.
- The coordination of the project will send criteria from which to base the choice of the new area to replace São Chico.
- AMOT will determine the area to be researched, based on current information and on the criteria established by national coordination.
- the choice of a new area (new community) implies the necessity to carry out a new social study – according to São Chico/Crepurizinho standards.

Sat 05/07 **Itaituba**

Contacts with National Coordination (via e-mail) in order to inform them about them about the facts and confirm the execution of a historical survey in Crepurizinho, as planned.

Sun 06/07 **Itaituba**

Preparation for the trip to Crepurizinho.

Mon. 07/07 **ITB – Crepurizinho**

Detailed project presentation to Crepurizinho schoolteachers, training of local teacher to carry out community census.

Beginning of the census.

Tue 08/07 **Luís Preto Mining site (Baixão do Papagaio)**

Continuation of community census

Wed 09/07 **Tolentino Mining Site**

Continuation of community census

Wed 09/07 **Interviews with community leaderships**

Continuation of community census

Wed 09/07 **Interviews with community leaderships**

Continuation of community census

Wed 09/07 Closing of community census

Crepurizinho – **Itaituba**

Meeting with Mr. Roosevelt and Mr. Bernhard Peregovich to exchange information about the trip (due to a black-out in Itaituba it was not possible to carry out a formal meeting)

Sat. 10/07 Telephone contact with Mr. Ivo Lubrinna (AMOT), informing him about the trip's first results

Itaituba – **Belém**

General Information

Access

Crepurizinho. There are regular flights from Itaituba to Crepurizão/Crepurizinho in twin-engine airplanes accommodating 9 passengers. There is a minimum number of passengers for the flight to be carried through. Ticket price: R\$518 (USD173) (Itaituba – Crepurizinho - Itaituba).

São Chico. Aerial access – only in a freighted airplane, costing R\$ 2,200.00 (USD733) for each stretch [permanence in São Chico implies that the aircraft will have to return empty to Itaituba (one hour flight costs R\$ 1,100.00), the aircraft has capacity for 5 passengers].

São Chico. Road access - only possible in the summer. Prices depend on the vehicle and type of arrangement (freight, regular trip). In good road conditions the trip takes around 10 hours.

Crepurizinho - São Chico. Aerial access. A one-way trip costs R\$1,100.00 (USD 366) (one flight hour including aircraft's displacement and its return to its base of operation).

Crepurizinho - São Chico. Road access (98 km) - Only in the summer. May be travelled by motorbike (R\$150 USD50) or through freighted pick-up truck (about R\$300,00 USD100). The trip takes about 5 hours in a pick-up truck in the current conditions.

Infrastructure

Since 2002, Crepurizinho has a telephone line (Telemar). There are public and residential telephones in good conditions. There are simple lodgings and some restaurant options (also simple).

São Chico, is still not integrated to the telephone net, but one residence offers telephone services (rural mobile) that works as a public telephone (R\$1,50 /min for conventional telephone). Usually communication with ITB is done through short waves radio. There are two residences that rent rooms (very simple) and many houses sell meals.

Transport

The transport to the mining sites may be done in a motorbike (there are many “moto-taxis”, all over Crepurizinho) or in a freighted car. In São Chico there are work fronts that can only be reached by motorbike and on foot.

Part 1. São Chico

The Mining Site History

According to information provided by Mr. Waldomiro, São Chico site was discovered in 1963. Probably the first areas to be exploited were those close to the village, which was built around the landing track, supporting the work fronts. From 1986, with the opening of the Transgarimpeira (branch of the Santarém- Cuiabá that goes from Moraes Almeida until Crepurizão), the access to the site is no longer exclusively via airplane, lowering the costs of production and maintaining the viability of the mineral exploitation site even during the 90's, albeit low gold prices in the international market and national economic policies that were little favourable to mining. In the end of the 90's, some miners had started to exploit primary deposits of the region, which had seemed very promising. The mining site reached top production in 1999/2000/2001, producing - only in the work front called Montanha - about two tons of gold. According to inhabitants' statements, the population of the site reached about 5.000 people. At the same time, the site's new track was constructed (inside a farm, about 1 km away from the village).

Site's General Description

Two years after the last "rush", São Chico shows a picture of little activity. From the seven work fronts connected to the site, six are in activity, especially those closer to the village's centre. There is a total of 69 people directly involved in the extraction - 59 miners/workers and 10 cooks. Work is concentrated in the extraction of secondary gold or primary deposits close to the surface, through outdoor panning. We estimate current production of São Chico to around 1 kg/ month, value that shall increase slightly during summer.

The work carried out in the *baixões* (inactive alluvial gold flats) is one of *repassagem*, that is panning previously exploited material. Usually, *baixões* go through their second or third *repassagem* with very low productivity and profitability, sometimes not even covering costs of extraction. Only in one of the fronts, it was observed panning of virgin alluvial material (areas located in between the active riverbed and higher levees).

The work teams are composed of 3 people (1 in the "spurt end", 1 on the hose, 1 assistant), with 30% of the auriferous production allocated to them. The reduction of the size of the team from 5-4 - how it was standard until the 90's - to 3 people, can be interpreted as a mechanism to maintain mineral exploitation viable in a scenario of exhaustion of the deposits and high

costs of production. The increase of the individual participation from 6% (five team) or 7,5 % (four team) to 10%, increases the possibility to guarantee, at the individual level, a minimum income enough to assure the maintenance of the workers in the site. The reduction of the size of the team does not necessarily mean an intensification of the individual work. Extraction through *repassagem* eliminates several of the work stages which traditionally require a lot of effort (roots cutting, river banks clearance). Nevertheless, there was an extension of weekly work hours. Saturday became a common workday; recess was reduced to Sundays (or to the day after *despescagem* (process of cleaning of the sluice box and concentration of the gold bearing material)). Recently there was the attempt to benefit rejects from mills (*curimã*) through an artisan process of cyaniding in stacks. This type of work has ceased, in one of the cases due to a misunderstanding between the partners of the enterprise and, in the other in case, due to lack of availability of material to be treated. The “laboratory” for gold refining was located in a farm outside village (S 06° 25' 04.9" / W 55° 56' 46.0"). In 2002, a “slope” (*rampa*) worked in the Mountain area (set of mills and centrifugal machines for the large-scale material processing). The owners of the equipment pay to the landowner a tax of 10% of the production.

The village

São Chico village has 63 houses along the old landing track. Four out of 63 houses are destined to public use (one of these is inhabited), three have exclusively commercial use and eight were confirmed by the neighbours as abandoned and without use. In total, 49 looked inhabited. From these, 44 were registered, representing a sample of 90% of total houses. The population registered amounted to 134 individuals. In the *Transgarimpeira*, next to the mining site’s entrance, there were three residences that were not included in the census. The village is 180 meters long towards 70° SE¹. The only public service in the village is a health post for malaria analysis belonging to the National Foundation of Health. The police station has been abandoned for three years (resident’s information). The village school installed in January 2003, interrupted its activities in June 2003 without further notice. The only collective service available is the cleaning of the public areas carried out by an old man, who is paid by the locals to provide this service. There are three diesel retailing and four gold buyers. They are:

- 1.) Mr. Waldomiro [S 6° 24'56.1" / W 55°. 58'.00.4"]

2 All tracks were taken according to the direction of the river current flux

- 2.) Carlos Enrique Gonçalves (Juca) [S 6° 24'57.0" / W 55°. 57'.59.2"]
- 3.) Nilson Pine (João do Comércio) [S 6° 24'57.8" / W 55°. 57'.58.7"]
- 4.) Pedro Pereira da Silva (Baixinho) [S 6° 24'57.8" / W 55°. 57'.58.7"]

All the gold buyers burn gold indoors, inside the store, without exhaustion and usually without protective individual equipment. Stores 3.) and 4.) also sell foodstuffs.

Houses Profile

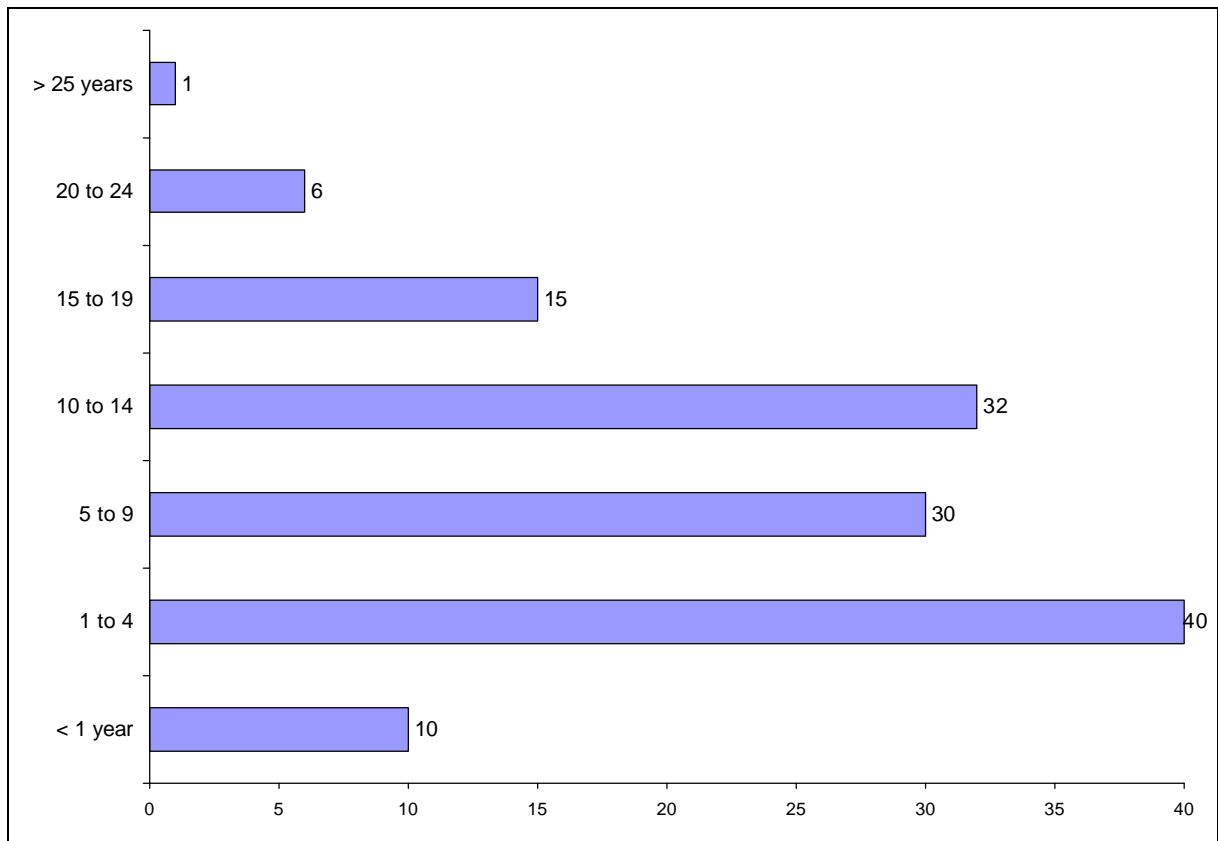
Most houses are at the same time used in commerce and as residences (Table 1, Table 2). Usually their inhabitants are also the owners. They are simple, wooden buildings, with cemented floors and roofed with aluminium sheets (Table 3, Table 4). They have four rooms in average, with an outdoor toilet (Table 5, Table 6).

The only source of electric power is a diesel-run generator. Half of the houses have their own generators, and usually supply electric power to the houses in the neighbourhood (Table 7). The amount charged for this service varies. Water for domestic consumption derives from wells (Table 8). The most common water storage procedure is in containers (Table 9). The water is not treated before consumption. Usually, domestic garbage is deposited close-by on unoccupied areas, and sometimes it is burnt (Table 10). A third of the houses cultivate a small yard, planting onions, green cabbage, coriander, parsley, “maxixe” and lettuce (Table 11). Few houses have fruit trees in their yards. In thirteen of the 44 houses, people keep animals for consumption (pigs in five houses, hens in 11 houses) (Table 12).

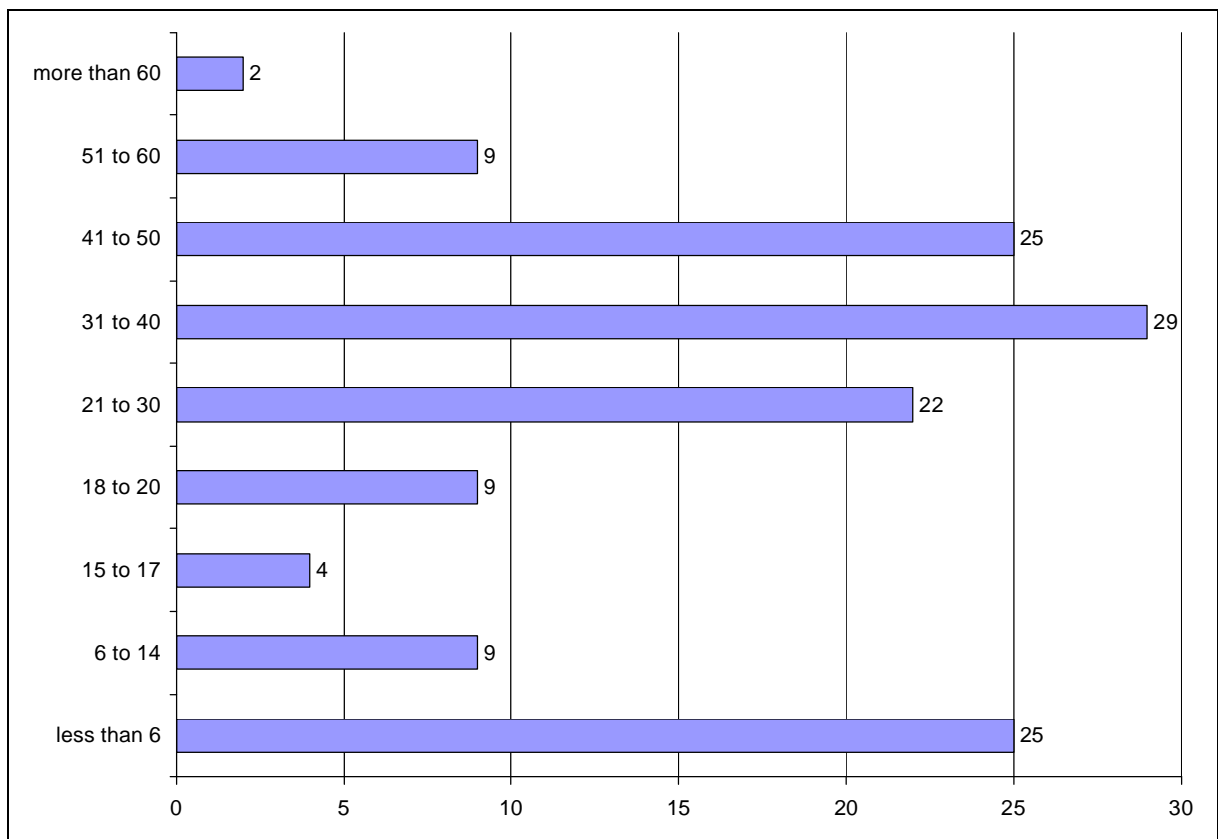
Population Profile

The majority of the population in São Chico village are male. Average length of stay in the village is 8.1 years (median = 7 years) (Graph 1) and the population is in average 28 years old. Graph 2 shows the distribution according to age groups. Taking in account only the adult population (> = 18 years), the average time of permanence in the village is raised to 9.6 years (median 10 years) and average age is higher: 36.8 years (median 36 years).

Graph 1: São Chico. Length of permanence in the village (age groups)

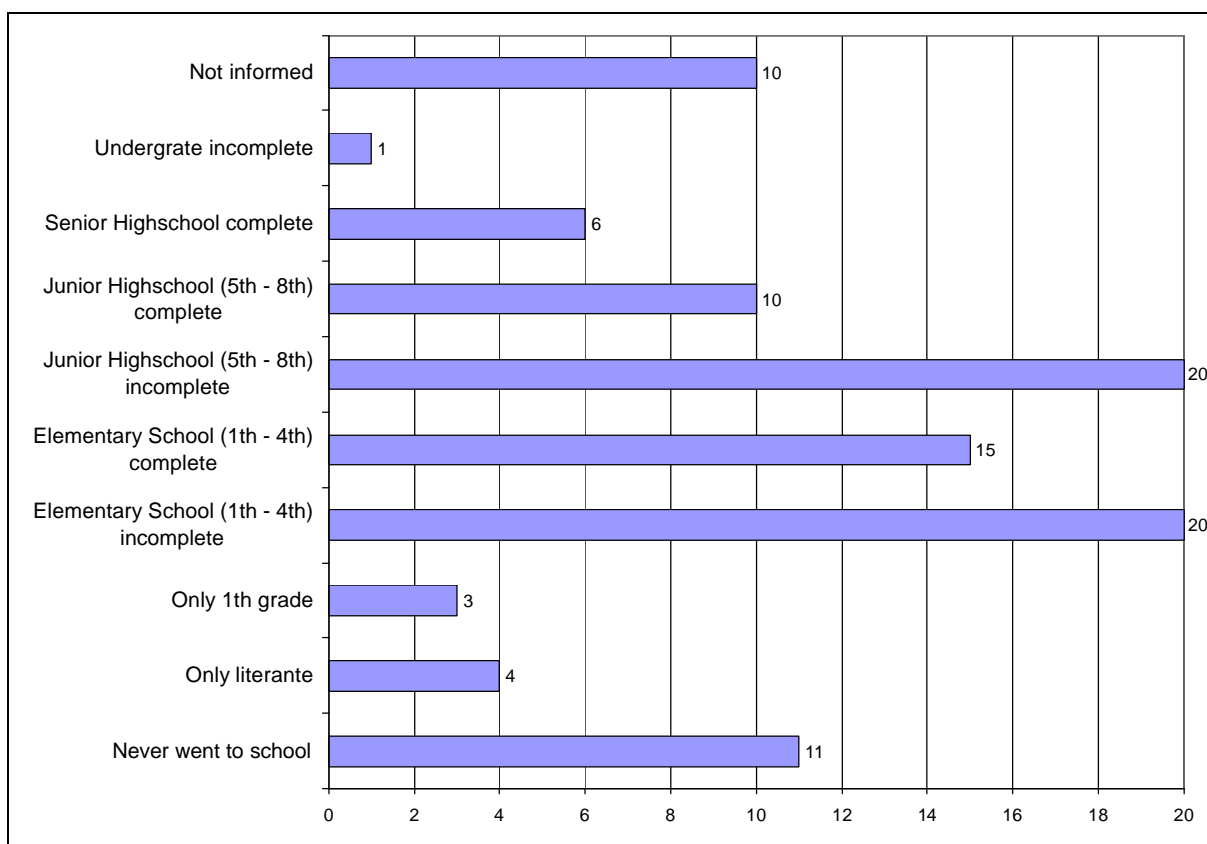


Graph 2: São Chico. Distribution of population in an age pyramid



Most people originate from Maranhão State (47%). If we take into account only the adult population, this percentage is raised to 61.5% of the adult population. Most children and adolescents (< 18 years) were born in Pará state (81.6%), thus confirming their parents' trend for permanent migration to the region. The level of education is very low, 38% of the population older than fifteen years did not complete elementary education (Graph 3) and have limited reading and writing abilities. Only 17% have reached a formal degree of schooling (secondary or elementary education).

Graph 3: São Chico. Education Level (% of population older than 14 years)



About 26% of the population does not have personal identification documents (Table 17). This percentage is even more expressive when taking into account children and teenagers (younger than 18) - 63.2% of them do not have identification documents. 81% of the population older than 15 are economically active. Table 19 shows which economic activities are carried out. A third of the people (32.1%) are gold miners. São Chico population' staple diet contains rice (100% of the houses consume rice daily), beef (80% confirm daily consumption), cassava flour (84%) and beans (61%) in their menu. Consumption of vegetables and fruits oscillates seasonally due to the difficulties of access. Fish was the food

less consumed. This is also due to difficulties in supply, since fish is usually supplied by Santarém market. Some inhabitants have declared to fish for subsistence in the farm's lakes and rivers. Further detailing on the consumption frequency of researched food items are available at the data presentation part. The most frequent consumer good in São Chico is the gas oven, 34 houses (77%) have declared they own one. The freezer (52%) and the fan (52%) were found in more than half of the houses. Televisions with parabolic aerials and radios (or cd-players) have also been found in 22 and 21 houses respectively. Eleven of the registered houses have declared to own a motorbike; nine to own a bicycle and seven a pick-up truck.

Social Organisation

São Chico is going through the initial stage of transition from a *corrutela* (a settlement only destined to support the activities in the mineral prospecting) to a village with lasting perspectives and diversified economic base. Social status is achieved through landownership (generally old mining areas legalized by the previous owners) and through commerce. Usually, there is a diversification of economy activities. The most profitable economy activity in commerce is selling oil, which is associated with gold purchase. The economic base for landowners is the rent and sale of land and also sale of cattle. Local dealers, who only live from surplus generated in the mineral prospecting, can hardly accumulate any capital. All oil dealers and landowners keep close relations with Itaituba or Santarém, where part of their families lives (usually school age children) or where they have properties. There are no forms of civil organisation in the village. The only form of organisation is through the protestant church "Assembléia de Deus", gathering 30 people.

Mining Sites

MONTANHA

Localisation: S 6° 25' 04.4" / W 55° 58'07. 5"

Distance from the village: 0.28 km.

Activities: 3 mills (10 people), 3 pairs of machine (9 people).

Extension of the area: 400 m toward 81° SE (following waterway)

During this work front, it was produced, in the last *fofoca* (1999/2001), around 2 tons of primary as well as secondary gold.

The area is located inside Mr. Waldomiro's farm. Two members of the community also have the use rights in smaller portions of the area. One of them received the property as a payment

for drilling (*sondagem*) services carried out by Mr. Waldomiro². The area is totally modified, showing signals of intense activity in previous years. Riverbanks' depths reached 12 meters in the extraction phase. Nowadays, due to the deposit of waste and "washed" material, banks are not even 4 meters deep. The three hammer mills³ are located together [S 6° 25' 00.5" / W 55° 58' 09.4"]. The mills are connected to Yanmar 18 HP engines, which burn up 15 litres of oil per day each. They are supplied with material extracted from the main ore body, usually material already treated in concentrators (sluice boxes). The choice of the material is made at random by the workers responsible for filling the mills. The three mills consume about 4 kg of mercury per week. According to one of the mill owners, in the weekly *despescagem*, 10 mercury grams are recovered from each mill.

Based on this information it was calculated the loss of 64 kg of Hg since February 2003, date declared to be the beginning of the mills' activities in this region. The pulp flows over copper plats and is deposited in small decantation holes (1 m x 1m). The decanted material (*curimã*) is removed continually and stored in a nearby location [S 6° 24' 59.9" / W 55° 58' 09.4"]. The extension of the base of the stack is 15 m x 20 m. Last year, this type of material was used for cyaniding. The remaining portions of cyaniding stacks are still visible at the riverbanks. During the visit it was observed three pairs of machines [PM1 (well) S 6° 25' 03.7" / W 55° 58' 06.8"], [PM2 box S 6° 25' 03.1" / W 55° 58' 08.4"], [PM3 box S 6° 24' 57.4" / W 55° 58' 10.5"]. The size of the sluice box is 9 meters. It is lined with plastic and fabric screen. Another drain measuring 1 meter is fixed at the end of the first one. This second sluice is an allowance made by the machine owner to the gold miners. The gold that remains in this second box belongs to the workers.

The level of gold purity is about 58% in both primary and secondary material.

There is an abandoned shaft in the area [S 6° 25' 07.4" / W 55° 58' 09.3"], which functioned until 2002. It is 18 meters deep with passages of 10 m and 3 m of extension, located in the area with the most expressive gold production, according to the prospectors. In Montanha there was a "slope" in 2002 (gold processing method brought from Poconé-MT) – a number of mills and concentrators able to process a great volume of ore. The owner of the area charged

² The contract established as means of payment, the right to use 30% of the drilled area. The gold miner, who owns a mechanical driller (4" x 70"), informed that he learnt how to use the equipment at Cuiu-Cuiu mining site through a work colleague, who actually worked as an assistant in a mining company, which drilled in the region. It was clear during the conversation, that they have *know how* on handling the machine, but a calculation of the deposit reserve is not carried out. The process is only used in order to indicate the places with the largest concentration of gold and based on this information, determine the levels of extraction.

³ Two mills belong to Mr. Waldomiro and one belongs to Mr. Gilberto, who informed us about the work front.

the owners of the equipment a tax of 10% of the production. The work stopped due to a dispute about the amounts of payments between the landowner and the owners of the equipment. All the water used in Montanha is drained toward a small creek (*igarapé*) flowing behind São Chico village (located at right side of the stream). The houses in the left side of the village collect water in wells at the margin of this stream.

ROSA

Localisation: S 6° 25' 38.0" / W 55° 57' 16.9"

Distance from the village: 1.85 km

Activities: 4 pairs of machine (12 people).

Extension of the area in work: about 1,320 m, route 40° NE.

This area belongs to Mr. Paulo Araras, who charges a tax of 10% of the production for use rights or sells use rights. Nowadays, 4 pairs of machines are in activity in three distinct places.

1) Work front Joanis [S 6° 25' 53.4" / W 55° 57' 38.8"]

Two pairs of machine working at the stream's margins. Although the active riverbed has already been exploited, the current target (between the mountain and the active riverbed) has not been worked yet. The work began in June 2003. The first *despescagens* generated a production of 70 g and 80 g of gold. According to machinery owners' calculations, who works with the team in the extraction, the production must reach 100 g for each *despescagem* in order to be profitable.

2) Work front Soares [S 6° 25' 43.2" / W 55° 57' 25.5"]

At this site, there are a couple of machines working. The work started in 2003. The owner of the equipment has bought from the landowner, the right to mine a 400-meter stretch of land for 200 g of gold.

This work front's team (three people and a cook) complement their diet with fish caught from the stream that drains the area. (camp/kitchen S 6° 25' 39.9" / W 55° 57' 23.7").

3) Serviço da Concita [S 6° 25' 38.0" / W 55° 57' 16.9"]

The owner of the equipment is also the team's cook. The work started in May 2003. The riverbank is 2,5 m to 3 m deep. The flow of material in the box is very strong and it is not used a drain in the front of "maráca" (hose), so organic material and small rocks (~ 4 cm of diameter) are poured in the sluice box. There are two more areas in this work front which have been deactivated recently [S 6° 25' 20.3" / W 55° 57' 10.6"], both in the outgoing tide of the stream.

SÃO CONRADO

Localisation: S 6° 25' 04.0" / W 55° 54' 45.3"

Distance from the village: 6.01 km (direct line).

Activities: 2 pairs of machine (6 people).

Extension of the area: 200 m, toward 150° SE

Located at a farm with the same name. Presently, there are two pairs of machines in the [PM1 (box) S 6° 25' 04.0" / W 55° 54' 45.3'], [PM2 (well) S 6° 25' 04.0" / W 55° 54' 45.3']. The owner of the equipment is Mr. Carlos Henrique Gonçalves (Juca), who has bought the extraction rights from the landowner. The depth of the riverbank is 3 to 4 meters deep. The work carried out there was the *repassagem* of material already worked in the active streambed. Especially at the winter, prospectors complete their diet with fish caught at the stream that flows through the site. We were informed of the existence of another point of service inside the area (1 pair of machines belonging to Mr. Zezinho). However, it was not possible to confirm this information during our visit.

SURUCUCU

Localisation: S 6° 26' 17.3" / W 55° 55' 28.5"

Distance from the village: 5.3 km (direct line).

Activities: 5 pairs of machine (15 people).

Extension of the area (visited): 150 m toward 30°.

There are three working sites in this area, all of them working *repassagem*. The visited area is worked by Mr. Antonio Conceição Lima who uses two teams (seven people including the cook). Each claim produces around 70 to 80 g of gold per *despescagem* (8 to 10 days). The gold purity level was informed to be 83%.

BAIXÃO NOVO

Localisation: S 6° 23' 36.2" / W 55° 57' 42.4"

Distance from the village: 2.5 km (direct line).

Activities: 1 pair of machines (3 people).

Extension of the area: 190 m, toward 67° NE.

There is one team working in this site. The extraction started in November 2002, the second *repassagem* is being carried out in the area. The sluice box is shorter (6 m) than usual in the region. The workers had connected a second box (1.5 m) for concentrating the gold which was to be given to them. The material flowed through the box very irregularly because of oscillations in the engine connected to a suction pump, driving a lot of organic material and

pebbles into the box. This leads to the deposits of organic material and rocks in the concentrator box. The concentrator has an inclination of approximately 15°. The final verification in pan is carried out in the stream [S 6° 23' 37.1" / W 55° 57' 42.0"].

GROTA – LADEIRA DE PEDRA [not visited]

Localisation:

Distance from the village:

Activities: 1 pair of machines (3 people).

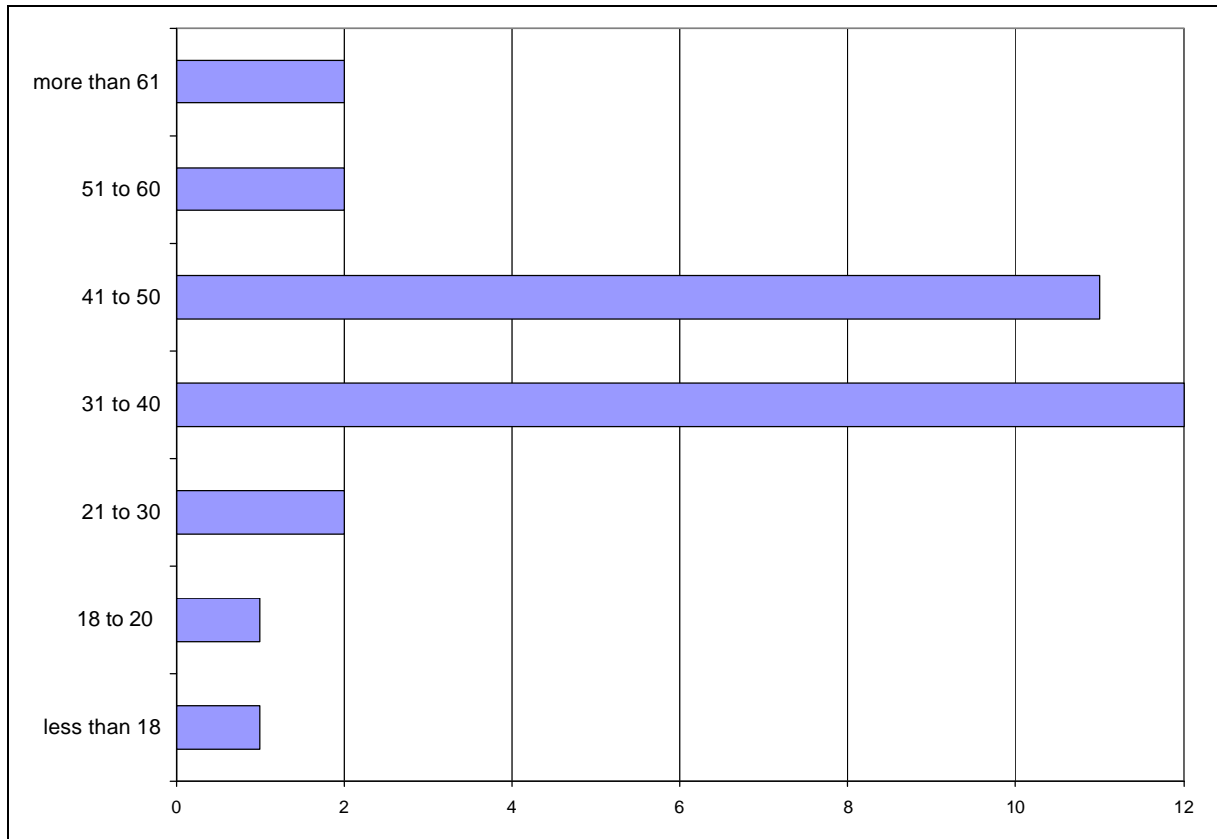
Mining Workers' Profile

Thirty-two from the 59 miners who work in the seven work fronts linked to São Chico could be interviewed, that is a 54% sample⁴. The São Chico mining sites workforce has the following profile.

The average age of the workers who work at the sites is 40 (Table 31). The majority of them is single or separated (Table 32), 75% informed they had children (Table 33), which entails an average of 3.3 children per father. The level of formal education is very low (Table 34). 55% informed never to have studied. From the remaining workers, only 4 (12.5%) went further than elementary school, not however, completing basic education (Table 35). 18% of the interviewed workers do not have personal identification documents (Table 36).

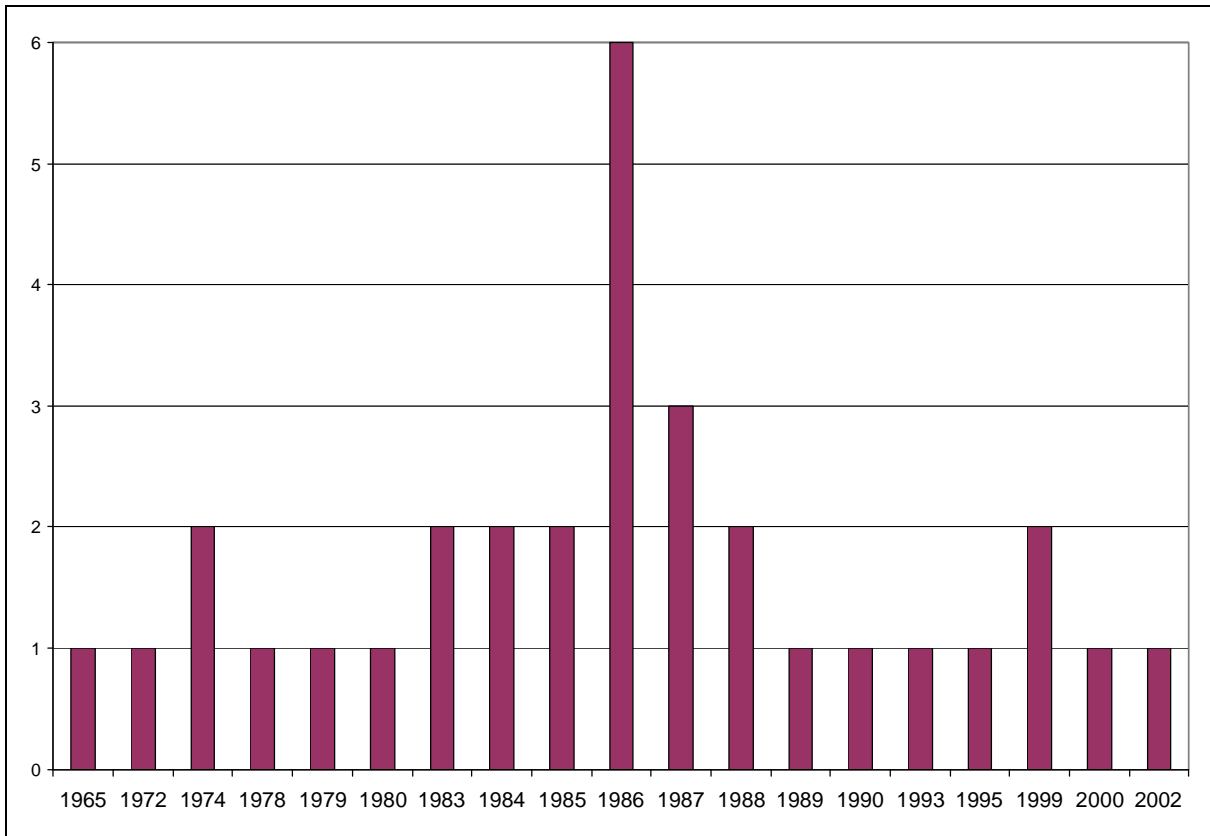
⁴ At all workfronts, we tried to interview two thirds of gold workers, thus sampling 39 individuals. Nevertheless, at some sites, this was not possible due to the absence of some workers. The Ladeira de Pedra workfront was inactive during our visit, but the owner told us that the works were about to be reactivated. Because of this, this workfront was included in our target public, although was not possible, during our stay, to interview someone from the team which was being hired .

Graph 4: São Chico – Community. Distribution of worker per age band

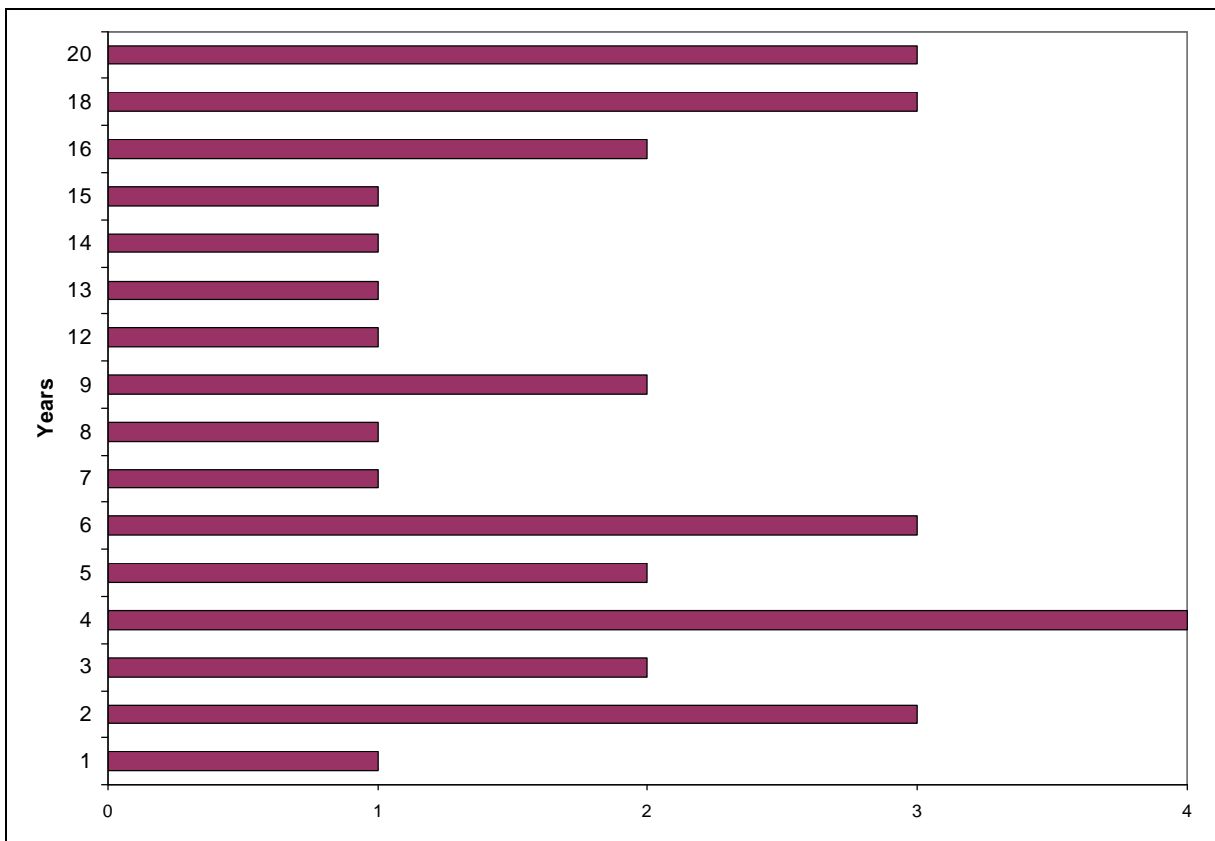


Most of the workforce from São Chico come from Maranhão state, where 70% were born and lived at the time they began their activities with mining (Table 37, Table 38). In average miners have start to work in gold mining 17 years ago. Graph 5 shows that the opening of the Transgarimpeira in 1986 was an important motif factor for starting in the activity. The average permanence in São Chico is 9.3 years (median = 7 years) and 80% of the miners have already worked in other sites, mostly at the Tapajós region.

Graph 5: São Chico – Mining Workers. Year of starting the work in mining



Graph 6: São Chico – Mining Workers. Length of stay in São Chico (years)



Before starting to work in mining, half of the workers had worked in agriculture, cultivating their own land (18.8%) or someone else's (31.3%), usually for subsistence. A third of them were wage labourers before starting to work in mines (Table 39). They declared to have earned about 1.3 minimum wages (USD100) (Table 40). Only two interviewees said they had gone back to the previous economic activity after arriving at the mining sites. The information above, and the length of stay in São Chico's mining sites, implies that mining activity is not a complementary economic activity, but the principal one. Another fact corroborates this hypothesis: in average, workers have not been to an urban area for four years (Table 43). The most cited city was Itaituba (60%). Albeit the long stay at the mining sites, most of the workers send money to relatives (43%). Those who send money, stay less continuous time at the site (2.4 years against 5.6 years for those who do not send money).

The work regimen at São Chico's fronts is very homogeneous. The teams that work in the exploration of secondary deposits receive 30% from the refined gold. As each team is composed of three workers, the individual profit is of 10% of the gold production. The workdays are: Monday to Saturday. Only 25% work half-time on Saturday. Usually, the only rest day is Sunday.

By asking about profits in the last *despescagens*, it was possible to have an idea about production levels at São Chico sites and worker's wages. The average individual profit was 8.5 grams of gold per *despescagem* (Table 47). Taking in account a price of R\$ 22,00 (USD7.3) for a gram of gold, their profit was at a R\$187,20 (USD62.4) for two working weeks, corresponding to a monthly wage of R\$374,4 (USD124.8). Even though the food is paid by the machinery owner, in most cases the workers have to pay the cook's wages. The cooks earn about 4 to 5 grams of gold monthly from each member of the team, totalling a wage that oscillates between 12g to 30 grams of gold per month or R\$ 264 (USD88) (for one team) to R\$ 660 (USD220) (for two teams) About 43% of the interviewed workers have experience in working independently in the mining sites. There is an equal distribution between working with machinery and manual work when working independently (Table 48, Table 49).

When questioned about illnesses in the last two months, 40% of the interviewees affirmed to have been sick in this period. From these, the great majority (70%) had to stop working and 60% looked for medical assistance (Table 50, Table 51, Table 52). Work accidents, like falling at the banks, cuts, burnings, and scorpion or snake bites are frequent. A third of the people interviewed reported a work related accident (Table 53) and 38% affirmed to have already witnessed a fatal accident (Table 54).

80% of the workers admitted to burn or to have burnt gold (Table 55) and none of the interviewed denied participating in a health evaluation (Table 56).

The workers' main sources of information are the radio – usually Radio Nacional – and television, Globo preferred (Table 57, Table 58).

Workers hardly participate in general elections. In the last election for State Governor and President, only one fourth of them voted (Table 59, Table 60, Table 61).

Although the situation of São Chico today is of apparent tranquillity, violence is present at the individual life history of Gold workers. More than half have already witnessed scenes of violence inside the areas, and in two third of the cases somebody was killed (Table 62, Table 63).

Part 2. Crepurizinho Mining Sites

The Mining Site History

This settlement (*currutela*) was founded in 1962, at the beginning of the new Tapajós gold cycle. Crepurizinho has always worked as a supplying point alternative to Crepurizão - a village possible to be accessed by boat. In 1974, a landing track was constructed by Mr Lourival Rodrigues de Lemos, who monopolised all flights and controlled commerce in the village. Another historic fact that marked the region was the creation of Transgarimpeira in 1986, which made road access also possible.

Crepurizinho had top production between 1983 and 1990, producing around 350/400 kg Au per month. At that time, 10.000 people lived at the village (3.000 registered voters). In the 90's, the discovery of new ore bodies heated the region's economy again, albeit not at the same level as in the eighties.

Sites' General Description

Crepurizinho is used as a logistical base to the work fronts situated in a 10 km radius. This makes estimates about mining activity in the region difficult. According to observations and information from local businesses, it may be stated that at present (July 2003) around 60 pairs of machines and 15 shafts are active in the region. This indicates a population of about 350 people working directly in these sites (300 gold miners and 50 cooks) and a monthly production of about 50 kg Au. After the last rush brought about by the discovery of primary deposits at the end of the 90's, currently the activity became stagnated.

There is a transformation in the mining activity in the region following various crisis management strategies. Three trends were identified:

Rise in processing capacity without modifying processing

Since 1998 miners/entrepreneurs originated from Poconé (MT) have brought to the region gold processing plants used at that site. These plants are composed by a number of ore mills, centrifugal machines and amalgamation container able to process in average 25 to 30 cubic meters of auriferous material, working in two shifts with a 12 people team earning wages. The total amount of needed investment in order to implement a new plant using new equipment is

around US\$ 400,000. The main production cost is the fuel (30.000 l per month)⁵. The type of material varies. At Tolentino the processed material comes from an old ore body abandoned by miners. At Reinaldo's, the plant owner was sampling the material from secondary deposits. It was informed that 0.2 g Au/t and 0.8 g Au/t were extracted from the material. According to Waldiney Mauro de Souza, Tolentino plant manager, the contents of gold in the plant's waste is about 10-12 g Au/ t, because they have not yet used a ball mill (a cylindrically shaped steel container filled with steel balls into which crushed ore is fed), which would raise the degree of gold recovery.

Cyanidation

Mining of primary gold deposits, different from alluvial gold, usually concentrates processing of auriferous material at only one place. It is the position where the mills have been installed. By this way it is possible to get spots of tailings with still a high concentration of gold. At first, this kind of material was not used. Nowadays, it has been targeted by people who offer to process the tailings using cyanidation. There have been at least two reported cases operating this processing the region. One is leaded by a chemist leads from São Paulo; another is composed by people from the region who have learnt the process when working in mining companies. Usually, the terms of agreements signed allow a partnership with the owner of these tailings.

Cyanidation adds value to a material which is worthless at the usual process. Therefore, it becomes attractive to many owners, whose deposits areas are at the brink of exhaustion, and foresee an additional income by the processing of tailing material. It has been noticed at informal conversations with landowners that there is a clear lack of information about cyanidation - the type of technology and its dangers.

Repassagem of semi-unexploited areas

At Crepurizinho one almost does not find unexploited areas with alluvial gold. An alternative found by workers in order to enrich the mining material was to wash already worked banks or backfills of tailings.

Team Members Reduction

Many pairs of machines active at Crepurizinho region work with three team members, which raise individual profits to 10% of production, at the same reducing production costs slightly. Mining already worked areas reduce the amount of time needed to clear the banks during extraction, avoiding the roots clearing job and enabling teams with lesser numbers.

⁵ Only two items represent in average production costs of about R\$ 47.000,00 per month. In total production costs are about R\$ 60.000,00 (US\$ 20,000), without calculating depreciation and eventual costs.

Reduction in the supply of workforce

Although there was an improvement of individual income due to the reduction of the team, small scale gold mining is facing an unprecedented problem: lack of working force. At least two visited work fronts were paralysed due to lack of workers. This situation indicates that gold production levels are so low at Crepurizinho region, that even with food provided by the machinery owner, the worker does not consider their efforts compensated satisfactorily, since it their duty to pay for the cook, who is paid 5 g Au per month from each worker. This behaviour is partly due to more wages alternatives and land access for subsistence production.

The Village

Crepurizinho village is composed by three streets and five lanes (see sketch). There are 264 households in total, with the following characteristics:

Houses	264
Unoccupied houses	56
Public unoccupied houses	04
Strictly commercial Houses	08
Houses used as deposits	12
Houses where no inhabitants were found ⁶	22
Houses who refused to be interviewed	01
Registered houses	161

Sampling amounted to 87.5% of households. 553 inhabitants were registered, indicating a population of about 600 people.

There is an elementary school at the village offering from 1st to 6th grade. The school has six employees (four teachers, a caretaker and a cook). In 2003, 146 students enrolled, lees than half enrolled in 2002 (300 students). The school works at a building that was a hospital until 1991. At the time, the building was bought⁷ by a city councillor from Crepurizinho, who donated it to the community. Lesson are offered in three shifts (7h00 – 11h00, 13h00 – 17h00, 18h00-22h00). The school has its own power generator, whose fuel is provided by the local government (mayor).

⁶ Three attempts were made in order to find the residents.

⁷ The price at the time was 353 g Au, according to buyer's information.

There is a public health post at the village, which carries out malaria tests and provides medicine in case of malaria. There is also a health agent at the village, who is paid by the local government.

The village's police station has 3 employees (1 SD, 1 corporal, 1 soldier).

There are three churches at the village, one is catholic one, and two protestant (Assembléia de Deus and Seventh Day Adventista). The catholic church has the largest number of followers.

There are four gold buyers at the village:

- Marsan (Luizinho) [S 6° 50'10.2" W 56° 34' 58.6"]

This store has the same owner for five years and it purchases 3 to 4 kg of gold monthly. The gold is burnt in an exhaust, but there is neither mercury recovery nor use of appropriate safety equipment.

- Silva – Compra de Ouro [S 6° 50'11.9" W 56° 34' 58.7"]

The store works inside a butchery, selling fresh meat. It's the less sophisticated and the one which purchases the least amount of gold.

- D'Gold [S 6° 50'12.3" W 56° 34' 58.7"]

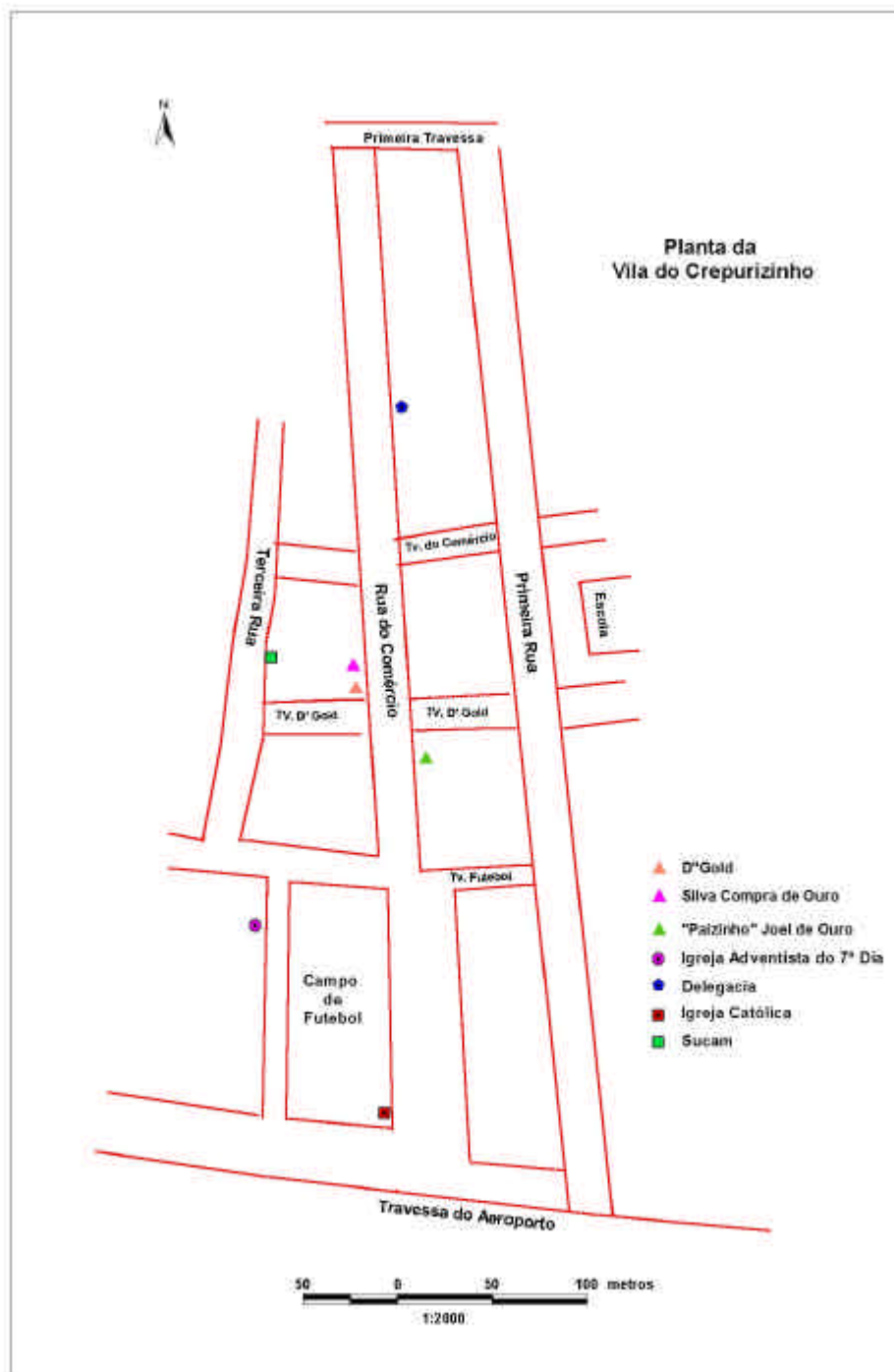
It the newest gold buying house. It opened in 2002 and buys 5 to 8 kg per month. There is an exhaust but no mercury recovery. As for protection equipment use, they only wear sunglasses at the time of gold casting.

- Joel do Ouro (Paizinho) [S 6° 50'13.1" W 56° 34' 58.1"]

One of the oldest stores and largest buyer (around 10 kg per month). There is an exhaust, but no mercury recovery. As for protection equipment use, they only wear sunglasses at the time of gold casting.

Commerce in the village is characterised by grocery stores, with large varieties, although there are also specialised stores for clothes and shoes, for example. The main commodity is the oil for fuel. There are 5 retailers who sell around 100.000 litres monthly, for mining (90%) or electric power generation (10%).

Graph 1: Crepurizinho village sketch



Houses' profile

Most houses are inhabited by owners (62.1%) and 11.2% is rented. The remaining houses (26.7%) are lent to the inhabitants with no rent charges (Table 64).

Differently from São Chico, in Crepurizinho most of the inhabited houses (74.5%) serve exclusively as residences. One-fourth of the houses are at the same time residential and commercial (Table 65)

Crepurizinho houses follow a specific construction pattern. Almost all of them are wooden houses (98,1%) roofed with *brasilite* or aluminium sheets (90.1%) and cement floored (Table 66, Table 67, Table 68). There are some two-floored houses.

There are 5 rooms in average in each house (1 room, 2 bedrooms, 1 kitchen, 1 bathroom), and most of them do not have toilet inside the houses (58.8%) (Table 69). Domestic sewage is taken to a dry-sewer (53.8%) or to an outdoor ditch (46.3%) (Table 70).

As the village has no electric power generated by the state power company, the only source of electric power is the diesel generator. One third of the houses do not have electric power. Some of the residences that have their own generator (24.2%) provide electric power to neighbouring houses, and they usually charge for the service. Almost half of the houses have electric power in this manner. Only 10% of the houses use electric power without having to pay for the service (Table 71).

Drinking water is collected by hand or through water pumps, from shallow wells (Table 72). Most of the houses stores drinking water in containers (47.2%). 48 houses have water tanks (29.8%), and 20.5% store their water in buckets (Table 74). Inhabitants have shown great concern with water treatment, only 15% drink untreated water. The remaining houses use chlorine (56.6%) or a water filter (20.1%) for treatment (Table 74).

Crepurizinho does not have a garbage collection service. The most common way to dispose of garbage is by depositing it on unoccupied areas (26%) or burning it (63%) (Table 75).

Most houses have a yard (83.2%), but only a small portion of them cultivates vegetables (21.1%). The most common fruit trees found at the yards are mango, papaya, banana, coconut and avocado trees. At these small yards, they grow vegetables and herbs like coriander, chive, pepper, lettuce and green cabbage (Table 76, Table 77).

Almost two thirds of the households (64.6%) keep domestic animals (cat 51%, dog 37%). In 42 houses (26.1%) they have animals to complement their diet (chickens in 39 houses and pigs in 10 houses) (Table 78, Table 79).

32 of the visited houses (19.9%) work in agriculture, in most cases only in subsistence agriculture (72.7 %) (Table 80, Table 81). The main crops are cultivated are: corn, beans, rice, manioc, and cassava.

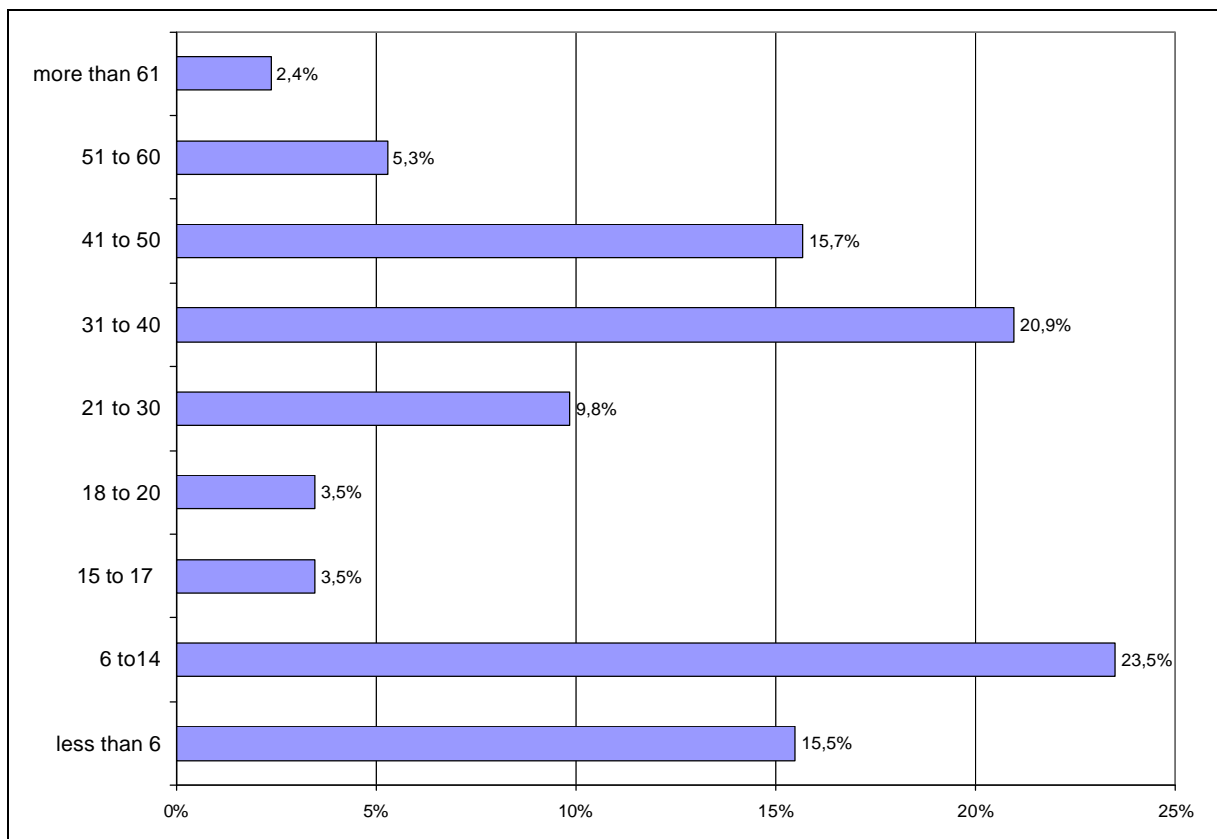
Population Profile

Age and origin

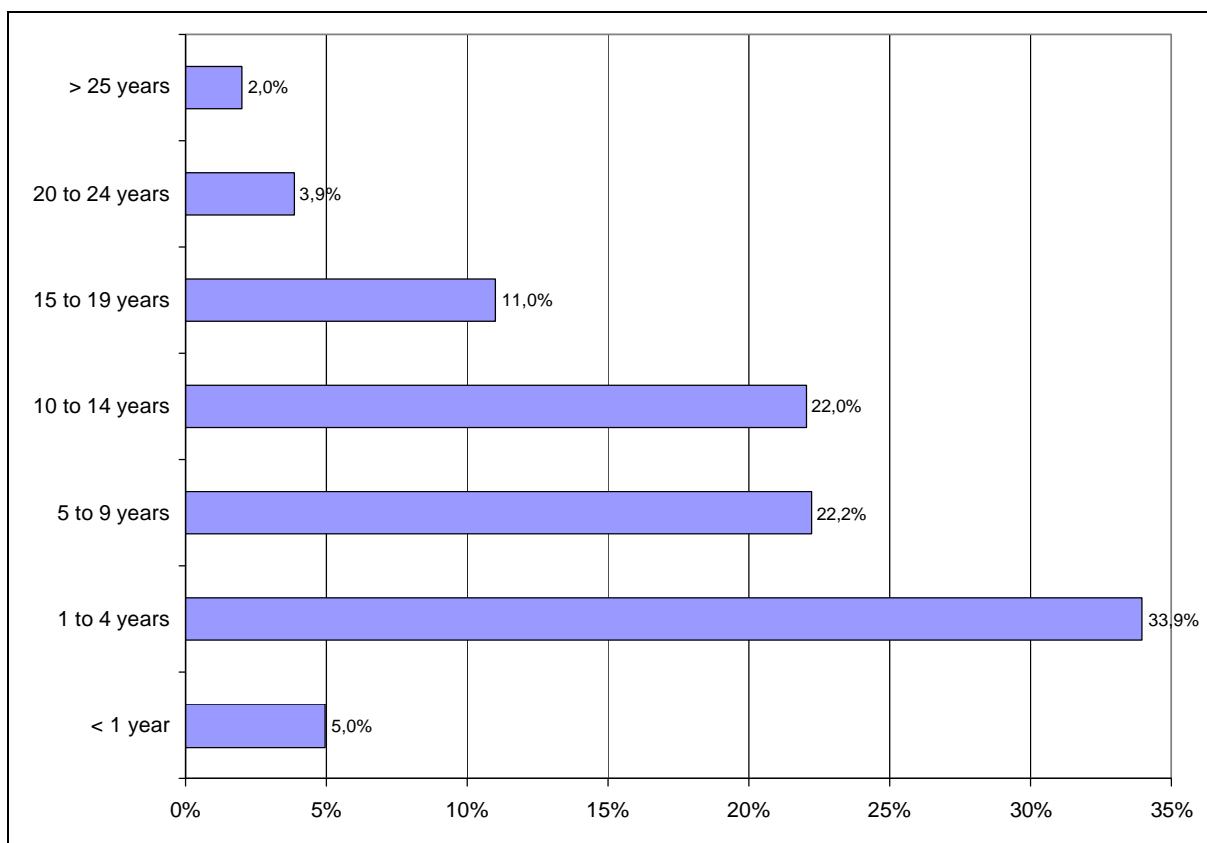
Most people in Crepurizinho are female (50.5%). The population is 25.5 years old in average. About 39% of the population is younger than 15 years old. Only 2.1% is older than 61. At age pyramid, it is visible the lack of teenagers (15 to 20 years old). This may be because there is no secondary school or university at the village (Graph 7).

People live at the village for 8 years in average (median 7 years). Half of the population was born in Pará state (49.5%), the second largest group is from Maranhão, 34.1% of the population. Among the adults, (older than 18) this scenario is reversed. The majority of adults come from Maranhão, 51.9% and *Paraenses* become only 22.2% of the total, which confirms the permanent migration trend already seen at São Chico.

Graph 7: Crepurizinho. Age Distribution of the population (in % from the total)



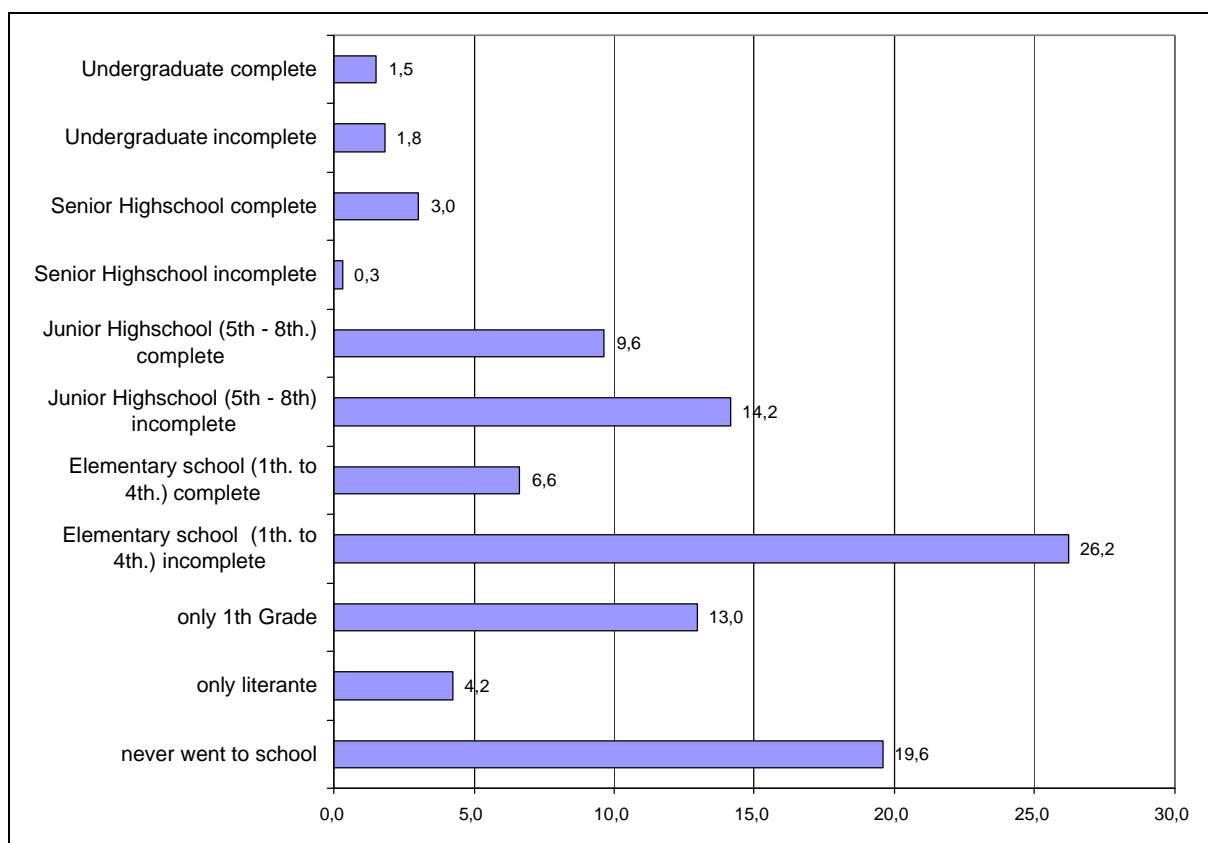
Graph 8: Crepurizinho. Population distribution according to length of residence at the village



Education

The level of formal education in the population older than 14 is very low, 62.4% have not concluded initial elementary grades (1st to 4th grade).

Graph 9: Crepurizinho. Level of education – (% of population older than 14)



From the 553 people registered, 85.5% have personal identification documents.

Income/Employment

From the population older than 14 years 65.7% are economically active. There is a clear division of labour according to gender. Most of the labour market is composed by males. They are 72.7% of the workforce, although their participation in this age group is of 52.6%. Only 8.6% of the male population older than 14 is unemployed. From the unemployed older than 14 years, 86.7% are female. (Table 84, Table 85).

The average monthly income is R\$503 (USD167). The average male income is around R\$538 (USD179), whereas females earn in average R\$397 (USD123) per month, with a 35.7% difference in income.

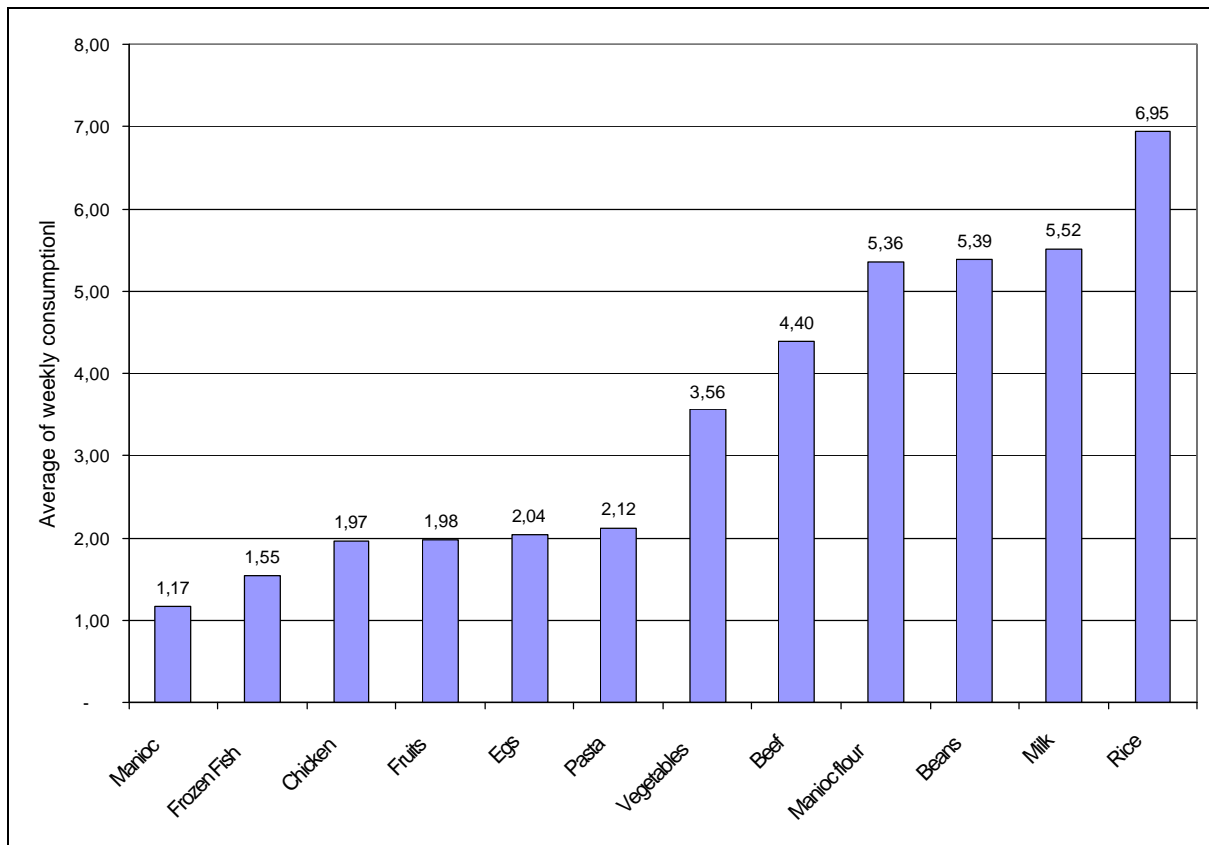
Dietary habits

The Crepurizinho population have a very diversified diet. They eat rice, milk, beans and manioc flour almost daily. Beef consumption is much lower than in São Chico, only 28 % of the population eats beef everyday. They eat beef four days a week in average. 16% of the houses also rely on hunt in their diet usually once a week.

Fish consumed at the village usually comes from Itaituba or (although less frequently) from Santarém. It arrives frozen and it is sold at the same price as beef (about R\$ 7,00 kg). The

population eats fish about 1.55 times a week in average. A small portion of the houses (13%) declared to eat fresh fish from the region. Consumption of salted fish (from Itaituba) is insignificant (1.8%).

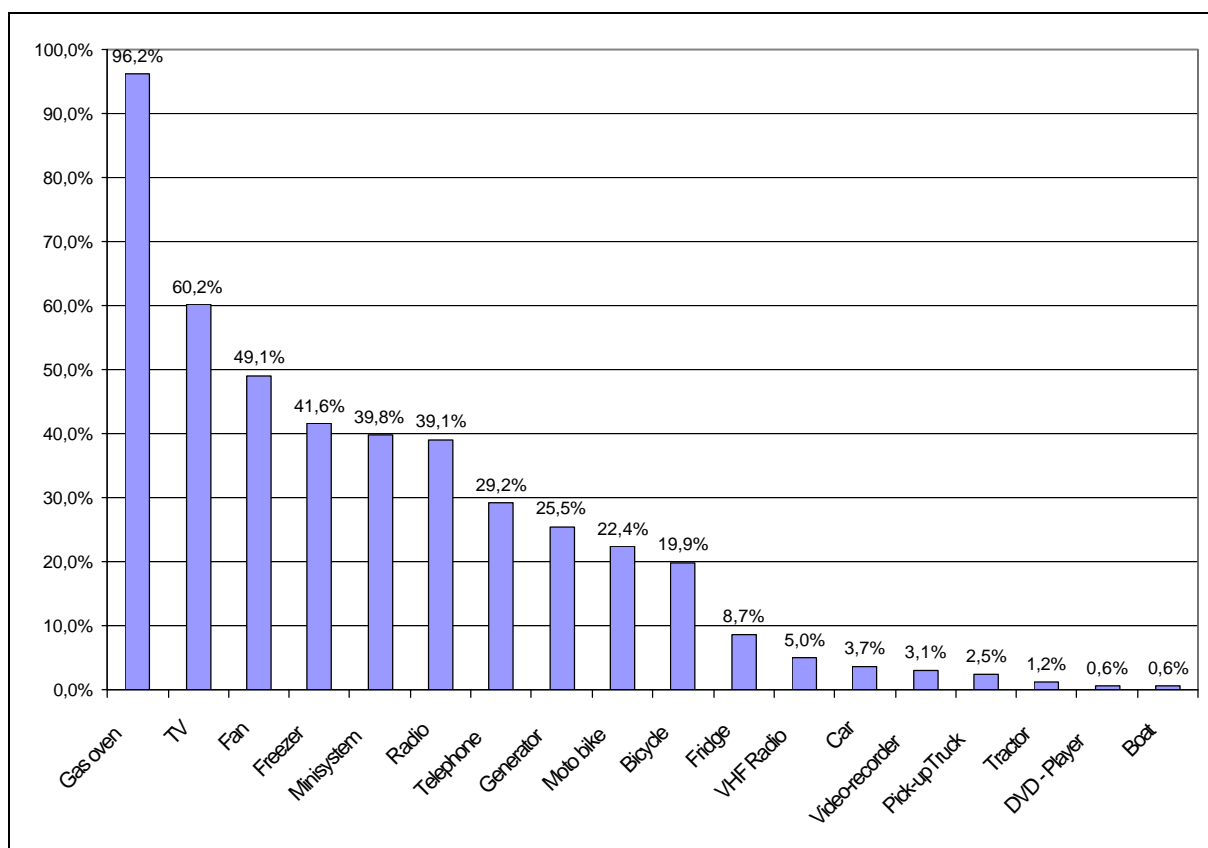
Graph 10: Crepurizinho. Dietary habits (average weekly consumption)



Consumer goods

The most popular consumer goods in Crepurizinho are the gas oven (96.2% of the houses own one) and the TV (60.2%). Graph 11 shows the complete picture of consumer goods availability in the village.

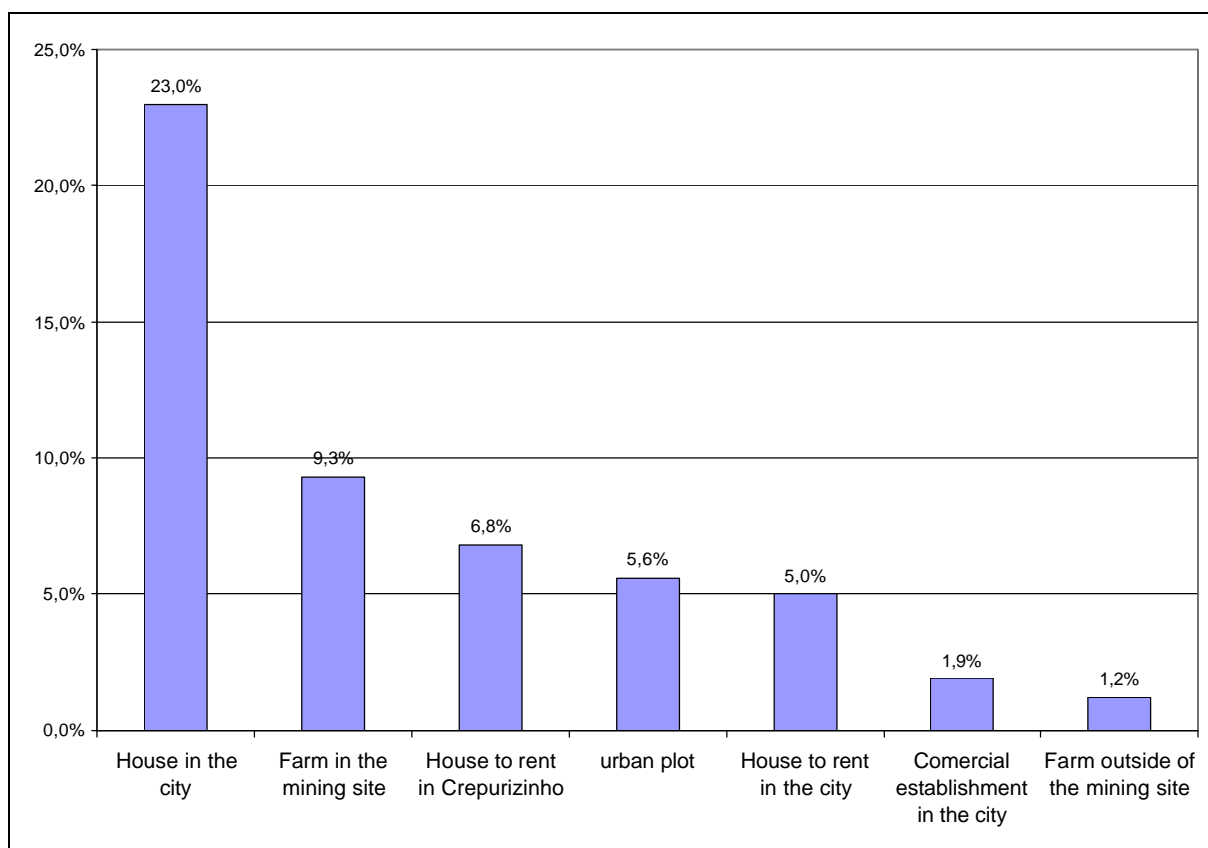
Graph 11: Crepurizinho – Consumers goods (% from registered houses)



Properties

The village’s internal economic differentiation is portrayed by the information on personal property. 102 houses declare not to have any property (63.4%), and about 23% of the interviewed houses declared to possess a house in the city, especially Itaituba. Farm ownership or property is restricted to a small portion of the population (less than 10%). From the data on property and access to consumer goods, it may be concluded that in Crepurizinho only a small portion of people (no more than 7%) that have different economic conditions from the others.

Graph 12: Crepurizinho - Village. Property ownership (in % of registered houses).



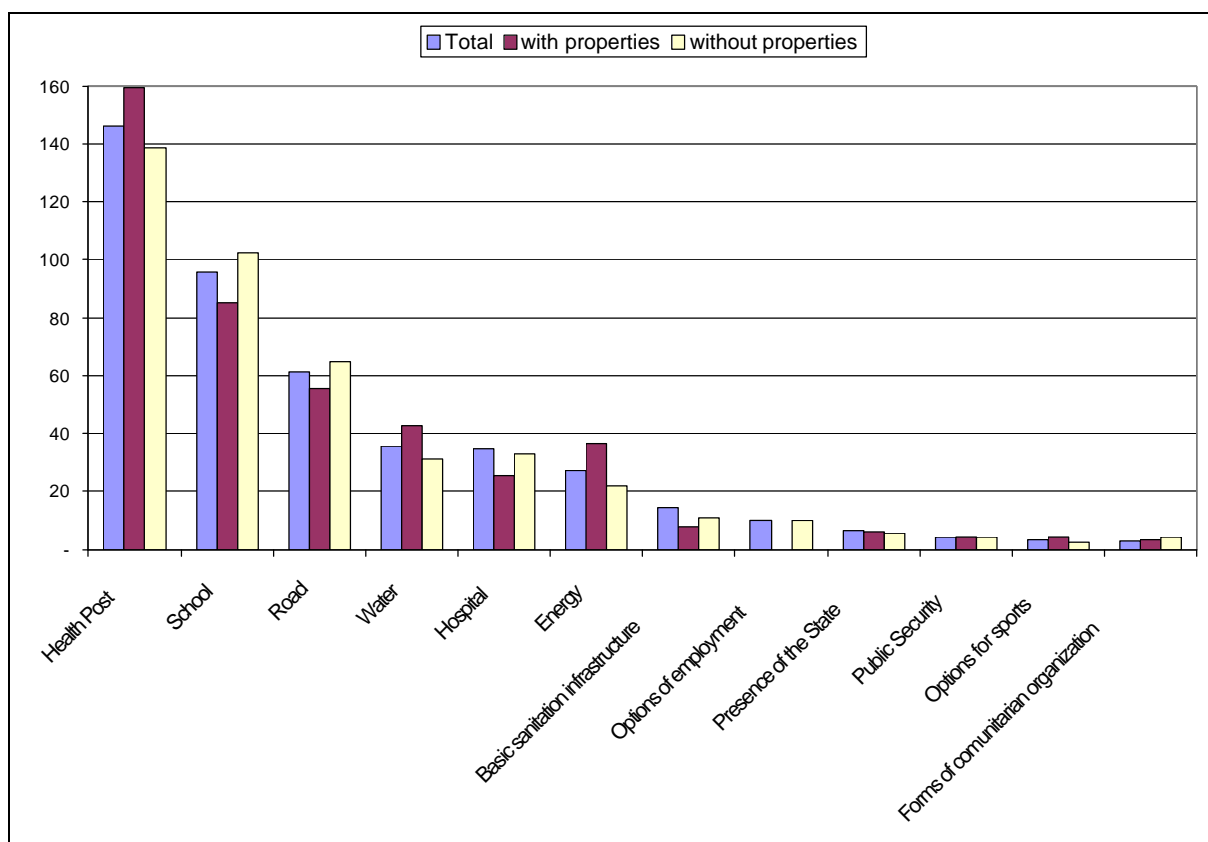
Demands

Asked what is lacking at Crepurizinho⁸, most people interviewed cited lack of medical care, either through a health post or a hospital. The second priority is a school with complete junior highschool levels (6th – 8th grade). Improvement and maintenance of road access, public water and electric power supply were other demands. Comparing the demands according to economic status, through the variable property, has shown interesting differences in opinion. There was no difference in most important needs (health care, school, road), but their attributed weights were different. Property owners attributed a higher value to medical care than the group who do not own property, who in turn, emphasised school and road access. There are many hypotheses to explain this difference. On one hand, we see an indication of different levels of awareness about the importance of the health care. On the other hand, this result may be interpreted as the availability of individual solutions, based in the availability of financial resources, to surpass the difficulties from lack of schools and access. Examples of

⁸ We asked them to inform the three main demands, which ordered by priority. From the answers a ranking score was made, the first option had a 2,0 weight, the second had a 1,5 weight and the third had 1 weight. An item cited by 50% as the first option, by 30% as the second option and by 60% as third priority, would have a final rank of 205 (2*50+1,5*30+1*60).

this strategy would be a second house in the city for children at school age or the use of air transportation during the period when the village is inaccessible by road.

Graph 13: Crepurizinho - Village. Priorities ranking (according to property ownership)



Participation in health status research

The demand for health care is also expressed in the inhabitants' promptness in participating in the health status research. Approximately 98.1% agreed to the disposal to participate in a health evaluation.

Contact with urban areas

The villagers have close ties to urban centres, especially Itaituba, which was cited by 69.6% as the last urban centre visited. About 41% of the informers declared that the last time they were in a city was in 2003, and 32.3% said they were there last year. Only 13% had not been to the city in three years.

Social Organisation

Crepurizinho is a community inside the municipal structure, which gives it some autonomy and access to some local government resources. In 1991, Crepurizinho led a movement

toward emancipation of Transgarimpeira region from Itaituba county. At the time, the village had around 3000 registered voters, and a population of about 12000 people. The plebiscite was not successful due to the fraud of electoral ballot boxes. Political independence was against the interests of a regional leader who intended to run for mayor in Itaituba (and later succeeded). Independence would take away an important vote reserve for him. Although the frauds became public afterwards, there were no re-run in the elections.

As a village, Crepurizinho has the right to the presidency of the community. Their role is to be an intermediary of community interests before the city hall. The last elections for the position (mandate 2003/2004) unveiled an unsatisfaction that has taken place in the last few years. There was a dispute between two groups for the position. The election of the new leader did not fulfil the basic rules of a democratic election, which threatened the legitimacy of the current leader. An opposition movement was created with representatives from the church and commerce. Their intention was to protest against the mayor's indifference toward the village, the enduring leaderships and their poor performance before the city hall.

The opposition was a spontaneous movement without formal characteristics or ties to political parties. This organisational weakness resulted in its rapid disintegration after the elections.

The only formal organisation besides the churches is the mother's club, created in December 2002. It brings together 82 women who meet once a week. Its main goal at the present is the installation of a health post in the village. A vegetable garden was also created in partnership with *Pastoral da Criança* (an NGO linked to the Catholic Church), which also intends to promote a sewing course. The club also has a program for donation of *cestas básicas* (basic provisions).

It is important for future project activities, to realise there are incongruities inside the community. Any action should be presented to the local leaders before starting a community assembly in order to gain villagers trust and to receive suggestions and ideas important to the success of the interventions. The following leaders should be invited to this kind of presentation:

Community President (Mr Luis Preto)

Community Vice-President (Mr Cícero Gomes da Silva)

School Principal (Mr Cleomar Nonato da Silva)

Mother's Club President (Mrs Sônia Alves Conrado)

Catholic Church representative (Mrs Marietta Régis)

AMOT Members (Mr. Zé Baiano and other residents).

Mining sites

The mining sites presented here do not include all the work fronts which rely on Crepurizinho for logistical support. The choice of these sites was based on the need to select an area to carry out the project. The criteria used for the selection were:

- Extractive activities diversity (primary and secondary deposits and repassagem);
- Existence expectancy (at least during the execution period of the project, the place would have to be active)
- AMOT's acceptance and agreement.

GARIMPO ZÉ BAIANO (JOSÉ LAURÊNCIO DE OLIVEIRA)

Localisation: S 06° 47 50.0" W 56°. 38'56. 9"

Distance from the village: 8.4 km (in a direct line).

This mining site which was originally chosen for carrying the project is inactive. Gold extraction was carried out recently with heavy machinery (truck, conveyor belt tractor, shovel and digger). The material had already been processed in a plant composed by ball mills, hammer mill, two concentrators and two centrifugal crushers. Around 300 m³ of ore were processed daily. Diesel consumption was about 1.200 litres per day. All the operation counted with a team of 12 people who earn fixed wages according to their jobs. The plant construction took two months and functioned for six months. It was stopped due to the owner's lack of financial resources, who expected to find a gold vein below another one which was worked in 1992-2001, through conventional methods (*shafts*).

In 2001, the site's owner established a partnership with a São Paulo citizen (Mr Sergio) who predicted the processing of the tailing through cyanidation in stockpiles. They started to build a stockpile, it used to be periodically stirred and completed with new material. The laboratory for gold refinement was built at Crepurizinho village. According to the mines land owner, he was not aware of cyaniding procedures and its toxicity. After the geologist who was trying to legalise the site requested, this partnership was terminated. Recently, the same owner received a few new offers to process the tailing, whose content is estimated between 5 to 6 g Au per ton.

MR TOLENTINO'S SITE

Localisation: S 06° 47 51.4" W 56°. 36'13.8"

Distance from the village: 4.7 km (in a direct line).

Activities: a slope, three shafts, a pair of machines

This site's owner, Mr Tolentino came from Maranhão in 1962 to the Tapajós mining site. After working at Mamoaal and Crepurizão sites, he stayed at Crepurizinho, where he started to work in 1984. The area he occupied was discovered in 1968. From 1985, he worked with six pairs of machines. In 1999, they started to work with the primary deposits, and the year with the largest production was 2001. At present he has four teams working with him. Three are extracting primary gold from the shaft and one is working with secondary gold (one pair of machines). The gold's grade is 77.5%.

In 2003, the site's owner established a partnership with a group of miners from Poconé, who set up in his land a plant similar to one set up at Mr. Baiano's⁹. The plant processes 700 tones of material per day. The objective is to raise this capacity to 1800 tones. The plant is working in two 12 hour shifts. The material originates from an old primary gold extraction area, and its content is about 0.8 g per ton. It was informed that diesel consumption is at 1000 litres per day.

The company's expansion plans depend on an understanding with the site's owner about the land issue. The company is interested in acquiring the area. At the same time, Mr. Tolentino who is growing older, is thinking in selling his land.

MR. LUÍS PRETO'S MINING SITE

It is composed by many work fronts; most of them along *baixão* (creek) *do papagaio*. The area is part of the old Tabocal mining site. Mr. Luís Preto arrived in Crepurizinho in 1974, when he bought from Mr. Waldomiro Bandeira and Mr. João Rodrigues, a portion of the land at the price of 100 g Au. The mining site was at top production in the sixties. In 1974, it was already considered a weak site, which facilitated its purchase and, in 1978, the expansion of the area occupied at no charges. At that time, a team of two people produced 70 and 100 g of gold in a fortnight. At the end of the seventies, 40 workers worked with the owner at *meia-praça*¹⁰. Between 1980 and 1982 Mr. Luís Preto concentrated at the rafts (1981 Marupa, 1982 Crepurizão) and from 1983 onwards, he started to work with machinery. At the end of the eighties, 18 pairs of machines were working and production reached 7 kg of gold per month before the national crisis start led by the Collor Plan. The situation improved in the second half of the nineties with exploitation of primary gold. Besides his own land, Mr Luís Preto

⁹ The terms of this partnership were not written down and the information received about this contract's details were contradictory. The person who is managing the plant is the same one who set up Zé Baiano's plant and, in 1999 set up the same equipment in São Chico – in the mountain area and in partnership with Mr. Waldomiro.

¹⁰ *Meia praça* is a working regime where the working team is provided by a local shop owner with food and working equipment. The gold production is divided between the team and the financier.

exploited primary gold in São Chico (1999) and at Zé Baiano's site (2000/2001), albeit without success. From 2001, he went back to his own land, where he started washing *repassagem* of some areas and exploitation of primary gold.

The mining site's land is free for exploitation, as long as a 10% of production is paid to the owner. According to Mr. Luis Preto, he earns around 40 to 60 g of gold with this leasing.

Santa Terezinha work front

Localisation: S 6°46'57.5" W 56°39'58.2"

Distance from Crepurizinho: 10.6 km

Activities: a shaft with an eight people team and a cook

At this work front an eight people team works in the extraction of primary gold. At present they are trying to find out the underground vein where the gold extracted from the *baixão* originates from. Two wells have been dug without expected success. The team receives 18% of production. During the construction of the well, a carpenter works together with the team, receiving 4% of the production. The cook earns 5g of gold per month from each team member.

Luizinho work front

Localisation: S 6°47'08.9" W 56°40'04.4"

Distance from the village: 10,7 km (in a direct line)

Distance from Terezinha: 0,2km (in a direct line)

During the visit, two people were starting camp in order to start *repassagem* works at a creek. The team has three people who earn 30% of production.

Tafarel's workfront

Localisation: S 6°47'09.4" W 56°40'14.5"

Distance from Crepurizinho: 11.0 km (in a direct line)

Distance from Luizinho: 0.3 km (in a direct line)

Activities: a 5 people team (including the work front proprietor) extraction of primary gold in *shaft*.

The area was exploited in 1978. At the time production (goldwashing through panning) was between 60 and 250 g of gold per stream bank. Between 1986 and 1990 the areas was worked again with machinery.

The shafts are 20 and 13 meters deep. Their production up to now was 500 g of gold.

Raimundo das Dores Lemos (Negão) work front

Localisation: S 6°45'23.3" W 56°40'58.9"

Distance from Crepurizinho: 14.0 km (in a direct line)

Distance from Tafarel: 3.6 km (in a direct line)

The front owner bought a portion of the *baixão* named Papagaio three years ago for 250 g of gold, and started working there with one pair of machines. At the beginning, the banks (10 m x 10 m) produced about 150 g Au. At present, production is low and it is around 40 to 60 grams. The production cycle is around 4 to 5 days. This is so due to the fact that the pits are shallow (2 meters deep) and the material worked has partly been washed already, with the other part unexploited (area in between the margin of the active riverbed and the mountain). Diesel consumption (27 hp engine) is 40 litres per day. After exhausting the land bought, the work front “proprietor” continued working leasing other area. The cook’s children live (6 and 2 years old) with the team. During our visit the works had stopped due to lack of workforce.

José Edmilson da Conceição (Codô) work front

Localisation: S 6°45'44.7" W 56°40'47.5"

Distance from Crepurizinho: 13.3 km (in a direct line)

Distance from Negão: 0.7 km (in a direct line).

Activities: two pairs of machines, 6 people

The machinery owner has been at this sector for four years. They work with *repassagem* of unexploited areas at tips of the riverbed. One bank 20 m x 20 m produces from 100 to 150 g of gold. The deposit is about 1.5 to 2 meters deep and the production cycle is around 15 to 20 days.

The workers started on May 2003. In the winter, it is not possible to work with two pairs of machines due to the flooding of production areas. In order not to stop the work front, they continue with only one pair of machines at lower production areas.

The main costs of production are diesel (400 litres per bank) and the rice (90 kg per bank). Mr. José Edmilson started working with mining in 1986, and he is from Codô–MA. In 1989, he bought his first machinery and in 2000 a second pair. His wife works as a cook with him at the site. They have a house in Tabocal and Crepurizinho, where they spend their Sundays.

Zé do Baixão work front

Localisation: S 6°46'44.7" W 56°40'47.5"

Distance from Crepurizinho: 12.6 km (in a direct line)

Distance from Codô: 0.9 km (in a direct line).

Activities: two pairs of machines, 6 people.

The area that is exploited is the same where Codôs teams a working. The cook's children live with the team (one is 2 years old and the other is 11 months old).

Edilson Gonçalves Soares work front

Localisation: S 6°46'18.2" W 56°40'30.4"

Distance from Crepurizinho: 12.3 km (in a direct line)

Distance from Zé do Baixão: 0.3 km (in a direct line).

Activities: one pair of machines, 3 people including the work front proprietors.

The banks (10 x 10m) produce between 40 g to 60 g of gold in a 12 to 15 days cycle. The work front proprietor started mining in 1978 (Amaná – AM), and was able to buy his own pair of machines in 1995.

Luís Preto work front

Localisation: S 6°46'22.7" W 56°40'27.5"

Distance from Crepurizinho: 12.1 km (in a direct line)

Distance from Edilson: 0.2 km (in a direct line).

Activities: a pair of machines and 5 people.

The team has worked since January 2003.

Francisco das Chagas work front

Localisation: S 6°46'24.7" W 56°40'24.0"

Distance from Crepurizinho: 12.0 km (in a direct line), 18 km by road

Distance from Luís Preto: 0.2 km (in a direct line).

Activities: one pair of machines, 4 people.

The team has worked since April 2003 in this area. The work front proprietor has worked in mining since 1970, always at Tapajós areas. He was able to buy his own machinery in 1984. He lives with the cook.

Noemia's work front

Localisation: S 6°47'06.7" W 56°39'24.2"

Distance from Crepurizinho: 10.9 km (in a direct line)

Distance from Chagas: 1.9 km (in a direct line).

Activities: one pair of machines, 3 people.

The work with secondary gold deposits started on February 2003, until then extraction was carried out through shafts.

Vicente Alves dos Santos (Brabo) work front

Localisation: S 6°47'06.7" W 56°39'24.2"

Distance from Crepurizinho: 10.9 km (in a direct line)

Distance from Noemia: 0.1 km (in a direct line).

Activities: One pair of machines, 2 people

The work front proprietor's wife is also the cook. There are two children living with them.

Mining Worker's profile

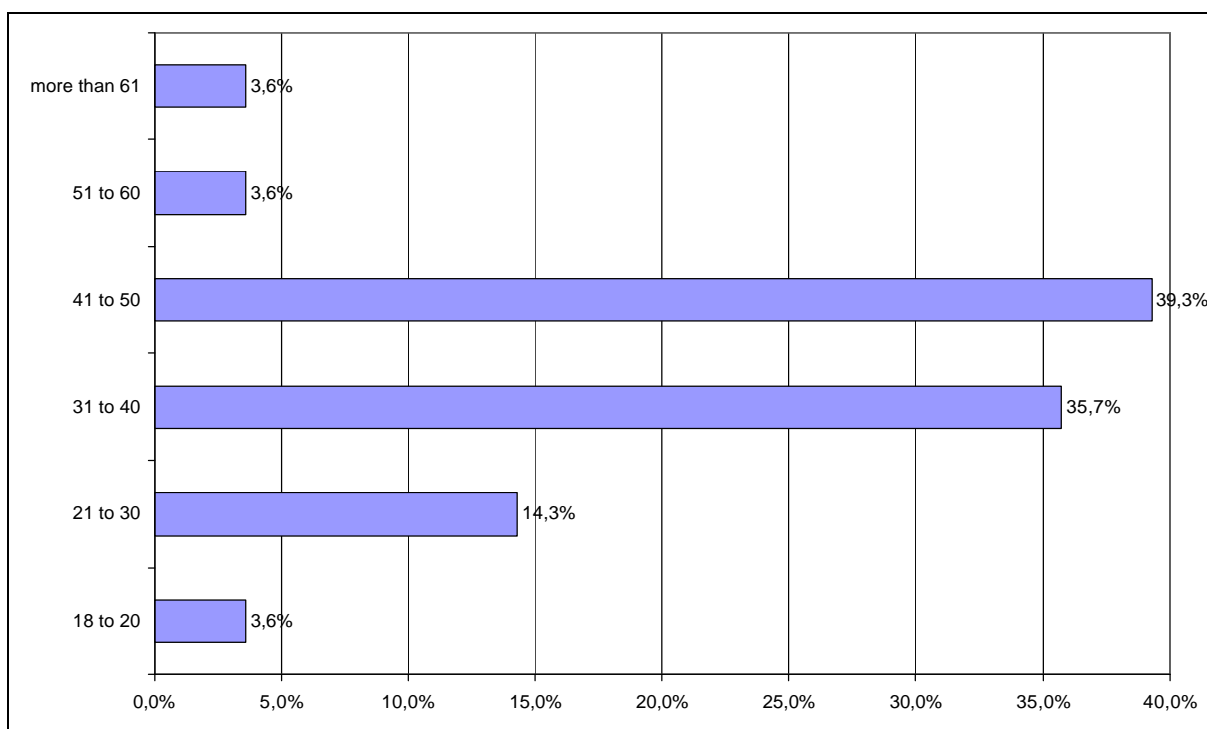
At Mr. Luís Preto's mining site, chosen as the project main target area, 38 workers, 7 cooks and 7 work front proprietor were working. In order to profile these people, 31 interviews with workers (81% sampling) and 2 interviews with cooks were carried out.¹¹

Age and origin

The workers are 39.75 years old in average (median = 40) (Table 98) and most of them (67%) declared themselves as being single. From the workers interviewed, 16 have children, averaging 2.81 children per father. More than half of the interviewed were born in Maranhão. Less than 20% of the workforce was born in Para. At the time they started working with mining, about 90% of the workers lived either in Pará (41.9%) or in Maranhão (48.4%). Levels of formal education are very low, 20% declared never to have studied. The others have gone to school for 3.2 years in average. Only 3 from the 31 people interviewed completed 8 grades of elementary school.

¹¹ From the seven cooks, three were partners of the work front owners, thus being better categorised as family labor, differently from the other four cooks.

Graph 14: Crepurizinho – Mining Workers. Distribution by age group



Length of stay at the Mining sites

Workers remain some 6.5 years in average at Crepurizinho. The main reasons they chose that site was because it was suggested by friends, because of the good levels of gold production and because they had already met the work front proprietor. (Table 101).

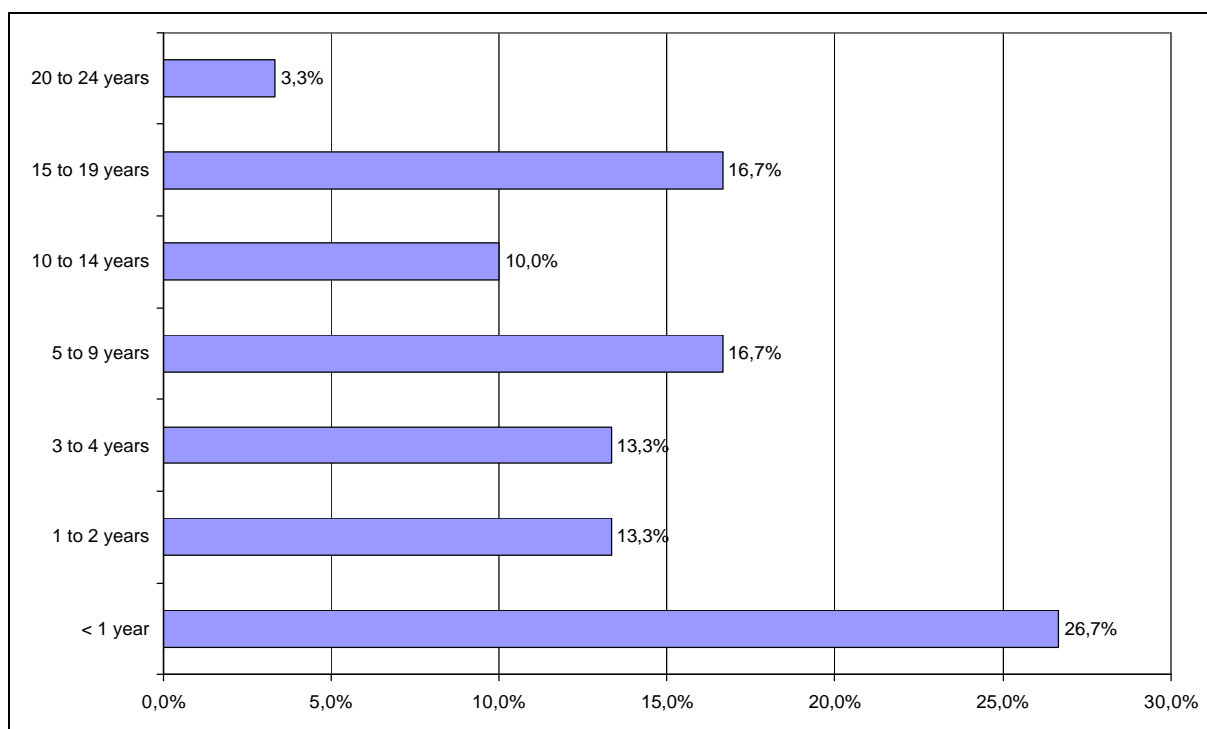
Most of the workers live at the site, usually in the *baixão* with work mates. Only 13% declared to reside at the village, and 22.6% said they lived in town (almost all of them in Itaituba).

Only 20% of workers have been visited at the site by relatives, usually brothers or sisters. Half of these cases, these visits happened over 5 years ago.

Workers stay at the mining site for 3 years in average before they go to an urban centre. For 70% of the people Itaituba is the main reference.

One third of workers have sent money/gold to someone outside the sites this year, usually to their families or parents.

Graph 15: Crepurizinho – Mining Workers. Length of stay at Crepurizinho



Work experience in mining

Crepurizinho workers have worked with gold mining for 18.5 years in average (Table 103). All of them have work experience at other sites.

Before starting to work at mining, half of them worked in agriculture – 19.4% in their own land and 25.8% in someone else's. A significant portion of them were wage labourers before working with mining, in average they earned 1.8 minimum wages (USD144). From those who worked in something else, 80% has never worked again with this other activity.

Work Regimen and earnings

Workers still earn a percentage of their production. This percentage varies between 10%, for those who work in a pair of machines with a three people team, and 2.25%, for those who work in a 8 people team in the extraction of primary gold in shafts.

Individual earnings at Crepurizinho are more complex to be calculated than in São Chico, due to discrepancies in individual percentages, and because some work fronts were paralysed or were being testes. From the available data, it is possible to estimate an average of 5g of gold per week, remembering that one third of people interviewed did not earn an income in the previous month.

From this information, it is possible to estimate that 300 workers at Crepurizinho earned about 4.500 g of gold monthly¹², which corresponds to a production of about 15 kg of gold per month. This amount is lower than the estimate provided by the businessmen in the village. This may be explained by the fact that Mr. Luis Preto's site, which served as reference for our estimate, produces much less than the region's average production. On the other hand, a mistaken estimate provided by local businessmen may not be discarded.

It is indeed the case that Crepurizinho production levels were better. This may be illustrated by the fact that the most productive *despescagens* informed by the interviewed miners, produced in average 1 kg of gold (median 400g), what corresponds to individual earnings of about 100 and 22,5 g of gold.

The workers best earnings were in average 507 g of gold (median 280 g) for 2 to 4 weeks work. Almost half of the workers who were interviewed (48.4%) has already worked for himself at the mining sites. Two thirds have worked manually panning gold, and one third has already been able to buy their own machinery.

Health

Approximately 38.7% of workers declared to have been sick in the last two months. Almost all of them (83.3%) interrupted work due to illness. Around 75% from the people who fell ill went looking for health care (doctor: 22.2%, Public Malaria Health Service 33.3%, pharmacy, 44.4%) and paid in average about R\$160 (USD 53) for private treatment.

Around 20% have had a work accident, and 35% have witnessed fatal accidents.

From the 31 workers interviewed, only one declared never to have melted gold, and only two did not agree to participate in a health evaluation.

Citizenship

Only 61.3% of the workers have personal identification documents. Most of them (58.1%) have never had any contact with a government representative. From those who stated to have contacts, usually this was in reference to SUCAM (84.6%).

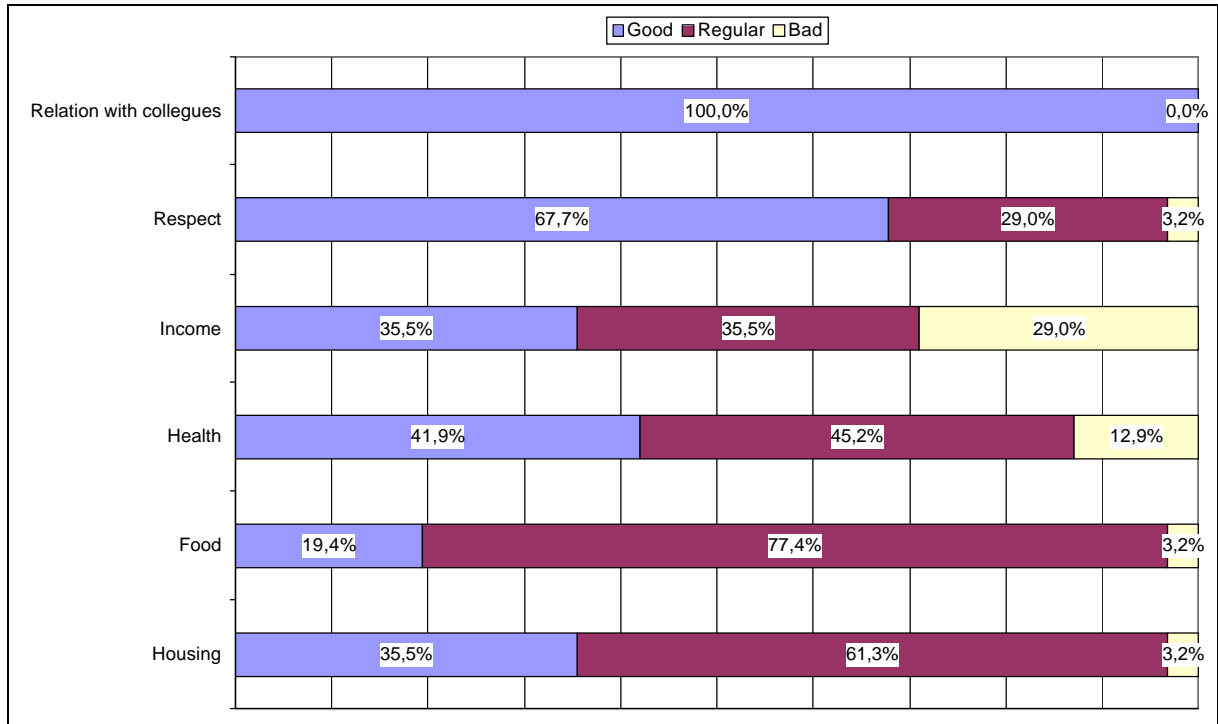
Participation in democratic election by voting is very low. Even though Crepurizinho is a voting post, only 25.8% voted at the last elections, which shows the lack of necessity to go to another a town.

¹² We presumed that 75% of workers earn 20 g of Au per month .

Points of view and perceptions

Asked about their opinion in relation to life at the mining site, the people interviewed were unanimous in stating that they consider having a good relationship with other team members. Two thirds think they are well respected as a person. About 29% think the income they earn is low. Interestingly health and accommodation have also been considered good. Food was the item that was less evaluated as being good¹³.

Graph 16: Crepurizinho – Mining Workers. Considerations about life in the mining sites



The positive evaluation of the item health is confirmed by the fact that only 35.5% of the workers thought that their work was prejudicial to their health. According to the workers, the main health risks related to mining were: malaria and working inside the water. Contact with mercury was only mentioned once.

Asked about the hazards of mercury, three fourths of the workers said it is prejudicial. No one, however, could explain in detail how it is dangerous (Table 105). Their knowledge about this was limited to the identification of the smoke from gold burning as dangerous. Most of them informed that their source of information was TV or radio (Table 106).

A little more than half of the workers (51.6%) think that mining is harmful to the environment. The most mentioned damage was deforestation (Table 107).

¹³ At many interviews, the owners of the mining site were present, which may have led to a bias in the answers. From this perspective, we can consider “fair” as a veiled reproval.

Albeit all the difficulties, most workers have not thought about leaving the mining site (Table 108).

Data Presentation

São Chico – Village. Data.

Table 1: São Chico - Village. Type of property

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wholly owned	34	77.3	77.3	77.3
	Rented	3	6.8	6.8	84.1
	Loaned	6	13.6	13.6	97.7
	Public	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Table 2: São Chico - Village. Type of habitation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	42	95.5	95.5	95.5
	Wood / brick	1	2.3	2.3	97.7
	Other	1	2.3	2.3	100.0
	Total	44	100.0	100.0	

Table 3: São Chico - Village. Type of roofing

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Zinc / Aluminum / Asbestos	36	81.8	81.8	81.8
	Straw	8	18.2	18.2	100.0
	Total	44	100.0	100.0	

Table 4: São Chico - Village. Type of floors

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	1	2.3	2.3	2.3
	Earth	8	18.2	18.2	20.5
	Cement	35	79.5	79.5	100.0
	Total	44	100.0	100.0	

Table 5: São Chico - Village. Location of toilet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Inside the house	5	11.4	12.2	12.2
	Outside the house	34	77.3	82.9	95.1
	Inexistent	2	4.5	4.9	100.0
	Total	41	93.2	100.0	

Missing	System	3	6.8		
Total		44	100.0		

Table 6: São Chico - Village. Sewage disposal

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dry sewer	15	34.1	37.5	37.5
	Open air sewage	20	45.5	50.0	87.5
	Water stream	1	2.3	2.5	90.0
	Others	4	9.1	10.0	100.0
	Total	40	90.9	100.0	
Missing	System	4	9.1		
Total		44	100.0		

Table 7: São Chico - Village. Electric power source

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wholly owner generator	20	45.5	46.5	46.5
	Shared generator	20	45.5	46.5	93.0
	Inexistent	3	6.8	7.0	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 8: São Chico - Village. Origin of water for domestic use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Artesian well	1	2.3	2.3	2.3
	Regular well	13	29.5	30.2	32.6
	Pumping well	24	54.5	55.8	88.4
	Other	5	11.4	11.6	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 9: São Chico - Village. Water storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Water reservoir	13	29.5	30.2	30.2
	Bucket	5	11.4	11.6	41.9
	Barrel	22	50.0	51.2	93.0
	No water	3	6.8	7.0	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 10: São Chico - Village. Domestic garbage disposal (Multiple Choice)

Category label	Code	Count	Pct of Responses	Pct of Cases
Burned	2	9	18.8	20.9
Buried	3	1	2.1	2.3
Open air disposal	5	36	75.0	83.7
Others	6	2	4.2	4.7
		-----	-----	-----
Total responses		48	100.0	111.6

1 missing cases; 43 valid cases

Table 11: São Chico – Village. Vegetable Gardens

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	31.8	32.6	32.6
	No	29	65.9	67.4	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 12: São Chico – Village. Domestic animals for consumption

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	29.5	30.2	30.2
	No	30	68.2	69.8	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

São Chico – Community. Population profile. Data

Table 13: São Chico - Community. Distribution of population by gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	81	60.4	60.4	60.4
	Female	53	39.6	39.6	100.0
	Total	134	100.0	100.0	

Table 14: São Chico - Community. Length of residence at the village (years)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	7.5	7.5	7.5
	1	10	7.5	7.5	14.9
	2	10	7.5	7.5	22.4
	3	10	7.5	7.5	29.9
	4	10	7.5	7.5	37.3
	5	6	4.5	4.5	41.8
	6	9	6.7	6.7	48.5
	7	5	3.7	3.7	52.2
	8	8	6.0	6.0	58.2
	9	2	1.5	1.5	59.7
	10	7	5.2	5.2	64.9
	11	4	3.0	3.0	67.9
	12	10	7.5	7.5	75.4
	13	5	3.7	3.7	79.1
	14	6	4.5	4.5	83.6
	15	6	4.5	4.5	88.1
	16	2	1.5	1.5	89.6
	17	5	3.7	3.7	93.3
	18	1	.7	.7	94.0
	19	1	.7	.7	94.8
	20	3	2.2	2.2	97.0
	22	1	.7	.7	97.8
	23	2	1.5	1.5	99.3
	29	1	.7	.7	100.0
	Total	134	100.0	100.0	

Table 15: São Chico - Community. State where villagers come from

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PA	47	35.1	35.1	35.1
	MA	63	47.0	47.0	82.1
	PI	6	4.5	4.5	86.6
	CE	4	3.0	3.0	89.6
	GO	3	2.2	2.2	91.8
	PR	3	2.2	2.2	94.0
	MG	2	1.5	1.5	95.5
	MT	2	1.5	1.5	97.0
	PB	1	.7	.7	97.8
	RO	1	.7	.7	98.5
	BA	1	.7	.7	99.3
	PE	1	.7	.7	100.0
	Total	134	100.0	100.0	

Table 16: São Chico - Community Population distribution according to economic activity

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	82	61.2	61.2	61.2
	No	52	38.8	38.8	100.0
	Total	134	100.0	100.0	

Table 17: São Chico - Community Population distribution according to schooling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Did not study	11	8.2	8.2	8.2
	Literate	4	3.0	3.0	11.2
	First grade only	5	3.7	3.7	70.1
	Elementary School Completed	16	11.9	11.9	23.1
	Elementary School Not Completed	21	15.7	15.7	38.8
	Junior High School Completed	10	7.5	7.5	46.3
	Junior High School Not Completed	20	14.9	14.9	61.2
	Sênior High School Completed	6	4.5	4.5	65.7
	Sênior High School Not Completed	1	.7	.7	66.4
	Pré School age	23	17.2	17.2	87.3
	Out of school	1	.7	.7	88.1
	Studies outside gold mine area	3	2.2	2.2	90.3
	Not informed / Not known	13	9.7	9.7	100.0
	Total	134	100.0	100.0	

Table 18: São Chico - Community. Population distribution according to possession of personal identification

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	99	73.9	73.9	73.9
	No	35	26.1	26.1	100.0
	Total	134	100.0	100.0	

Table 19 – São Chico – Community. Economic activity (population older than 15)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Gold miner	26	32.1	40.6	40.6
	Mining machine owner	4	4.9	6.3	46.9
	Trader	13	16.0	20.3	67.2
	Restaurant / Snack Bar	6	7.4	9.4	76.6
	Farrmer	4	4.9	6.3	82.8
	Laundry	1	1.2	1.6	84.4
	Housekeeping maid	3	3.7	4.7	89.1
	Local businessman	5	6.2	7.8	96.9
	Mechanic	1	1.2	1.6	98.4
	Health agent	1	1.2	1.6	100.0
	Total	64	79.0	100.0	
Missing	System	17	21.0		
Total		81	100.0		

São Chico – Community. Dietary habits. Data

Table 20: São Chico - Community. Weekly consumption of rice.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	7	43	97.7	100.0	100.0
Missing	System	1	2.3		
Total		44	100.0		

Table 21: São Chico - Community. Weekly beef consumption

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	2	4.5	4.7	4.7
	3	3	6.8	7.0	11.6
	5	2	4.5	4.7	16.3
	6	1	2.3	2.3	18.6
	7	35	79.5	81.4	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 22: São Chico - Community. Weekly manioc flour consumption

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	6.8	7.0	7.0
	2	2	4.5	4.7	11.6
	3	1	2.3	2.3	14.0
	7	37	84.1	86.0	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 23: São Chico - Community. Weekly beans consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	4	9.1	9.3	9.3
	1	4	9.1	9.3	18.6
	2	3	6.8	7.0	25.6
	3	2	4.5	4.7	30.2
	5	1	2.3	2.3	32.6
	6	2	4.5	4.7	37.2
	7	27	61.4	62.8	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 24: São Chico - Community. Weekly milk consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	34.1	34.9	34.9
	1	4	9.1	9.3	44.2
	3	1	2.3	2.3	46.5
	5	1	2.3	2.3	48.8
	7	22	50.0	51.2	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 25: São Chico - Community. Weekly vegetable consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	5	11.4	11.6	11.6
	1	15	34.1	34.9	46.5
	2	7	15.9	16.3	62.8
	3	4	9.1	9.3	72.1
	4	3	6.8	7.0	79.1
	5	2	4.5	4.7	83.7
	6	1	2.3	2.3	86.0
	7	6	13.6	14.0	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 26: São Chico - Community Weekly fruit consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	7	15.9	16.3	16.3
	1	15	34.1	34.9	51.2
	2	9	20.5	20.9	72.1
	3	5	11.4	11.6	83.7
	4	1	2.3	2.3	86.0
	5	1	2.3	2.3	88.4
	7	5	11.4	11.6	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 27: São Chico - Community - Community. Weekly egg consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	12	27.3	27.9	27.9
	1	15	34.1	34.9	62.8
	2	7	15.9	16.3	79.1
	3	1	2.3	2.3	81.4
	4	2	4.5	4.7	86.0
	5	1	2.3	2.3	88.4
	6	1	2.3	2.3	90.7
	7	4	9.1	9.3	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 28: São Chico - Community- Community. Weekly pasta consumption

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	22.7	23.3	23.3
	1	14	31.8	32.6	55.8
	2	12	27.3	27.9	83.7
	3	4	9.1	9.3	93.0
	6	1	2.3	2.3	95.3
	7	2	4.5	4.7	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 29: São Chico - Community - Community Weekly chicken consumption.

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	11	25.0	25.6	25.6
	1	12	27.3	27.9	53.5
	2	13	29.5	30.2	83.7
	3	6	13.6	14.0	97.7
	7	1	2.3	2.3	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

Table 30: São Chico - Community. Weekly fish consumption

	Weekly consumption in days	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	8	18.2	18.6	18.6
	1	17	38.6	39.5	58.1
	2	15	34.1	34.9	93.0
	3	1	2.3	2.3	95.3
	4	1	2.3	2.3	97.7
	7	1	2.3	2.3	100.0
	Total	43	97.7	100.0	
Missing	System	1	2.3		
Total		44	100.0		

São Chico –Mining Worker’s Profile. Data

Table 31: São Chico – Mining Workers. Age of interviewees.

	Age	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	1	3.1	3.2	3.2
	18	1	3.1	3.2	6.5
	24	1	3.1	3.2	9.7
	26	1	3.1	3.2	12.9
	32	1	3.1	3.2	16.1
	33	1	3.1	3.2	19.4
	34	2	6.3	6.5	25.8
	35	2	6.3	6.5	32.3
	36	2	6.3	6.5	38.7
	38	2	6.3	6.5	45.2
	39	1	3.1	3.2	48.4
	40	1	3.1	3.2	51.6
	42	2	6.3	6.5	58.1
	43	2	6.3	6.5	64.5
	46	3	9.4	9.7	74.2
	47	1	3.1	3.2	77.4
	48	1	3.1	3.2	80.6
	49	2	6.3	6.5	87.1
	52	1	3.1	3.2	90.3
	59	1	3.1	3.2	93.5
	61	1	3.1	3.2	96.8
	65	1	3.1	3.2	100.0
	Total	31	96.9	100.0	
Missing	System	1	3.1		
Total		32	100.0		

Table 32: São Chico – Mining Workers. Civil Status.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	15	46.9	46.9	46.9
	Married	6	18.8	18.8	65.6
	Separated	4	12.5	12.5	78.1
	Living with	7	21.9	21.9	100.0
	Total	32	100.0	100.0	

Table 33: São Chico – Mining workers. Paternity.

	Children?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	22	68.8	75.9	75.9
	No	7	21.9	24.1	100.0
	Total	29	90.6	100.0	
Missing	System	3	9.4		
Total		32	100.0		

Table 34: São Chico – Mining workers. Education.

	Has studied?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	43.8	45.2	45.2
	No	17	53.1	54.8	100.0
	Total	31	96.9	100.0	
Missing	System	1	3.1		
Total		32	100.0		

Table 35: São Chico – Mining workers. Formal Education.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Only literate	1	3.1	7.1	7.1
	Junior High School Not Completed	9	28.1	64.3	71.4
	Senior High School Not Completed	4	12.5	28.6	100.0
	Total	14	43.8	100.0	
Missing	System	18	56.3		
Total		32	100.0		

Table 36: São Chico – Mining workers. Personal identification documents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	26	81.3	81.3	81.3
	No	6	18.8	18.8	100.0
	Total	32	100.0	100.0	

Table 37: São Chico – Mining workers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PA	7	21.9	22.6	22.6
	MA	22	68.8	71.0	93.5
	CE	2	6.3	6.5	100.0
	Total	31	96.9	100.0	
Missing	System	1	3.1		
Total		32	100.0		

Table 38: São Chico – Mining workers. Town where lives when started working at the sites

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PA	9	28.1	28.1	28.1
	MA	21	65.6	65.6	93.8
	MT	2	6.3	6.3	100.0
	Total	32	100.0	100.0	

Table 39: São Chico – Mining workers. Economic activity before starting work in mining

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wholly owned farm	6	18.8	18.8	18.8
	Rented farm	10	31.3	31.3	50.0
	Trader / Self -employed	3	9.4	9.4	59.4
	Gold mining as first job	2	6.3	6.3	65.6
	Worker	11	34.4	34.4	100.0
	Total	32	100.0	100.0	

Table 40: São Chico – Mining workers. Declared earnings in previous activities (in SM= USD80)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.5	2	6.3	20.0	20.0
	1.0	4	12.5	40.0	60.0
	1.5	1	3.1	10.0	70.0
	2.0	2	6.3	20.0	90.0
	3.0	1	3.1	10.0	100.0
	Total	10	31.3	100.0	
Missing	System	22	68.8		
Total		32	100.0		

Table 41: São Chico – Mining workers. Subsistence agriculture before mining

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	43.8	93.3	93.3
	No	1	3.1	6.7	100.0
	Total	15	46.9	100.0	
Missing	System	17	53.1		
Total		32	100.0		

Table 42: São Chico- Mining workers. Return to previous economic activity

	Return	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes. not regular	2	6.3	6.9	6.9
	No	27	84.4	93.1	100.0
	Total	29	90.6	100.0	
Missing	System	3	9.4		
Total		32	100.0		

Table 43: São Chico – Mining workers. Length of stay in the sites (in years)

	Years of continuous stay	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.8	1	3.1	3.2	3.2
	.9	1	3.1	3.2	6.5
	1.0	2	6.3	6.5	12.9
	2.0	8	25.0	25.8	38.7
	3.0	6	18.8	19.4	58.1
	4.0	2	6.3	6.5	64.5
	5.0	1	3.1	3.2	67.7
	6.0	4	12.5	12.9	80.6
	8.0	2	6.3	6.5	87.1
	9.0	1	3.1	3.2	90.3
	10.0	1	3.1	3.2	93.5
	13.0	1	3.1	3.2	96.8
	15.0	1	3.1	3.2	100.0
		Total	31	96.9	100.0
Missing	System	1	3.1		
Total		32	100.0		

Table 44: São Chico – Mining workers. Last town visited.

	City	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Alta Floresta-MT	2	6.3	6.3	6.3
	Caxias-MA	1	3.1	3.1	9.4
	Itaituba-PA	20	62.5	62.5	71.9
	Not informed	5	15.6	15.6	87.5
	Novo Progresso-PA	2	6.3	6.3	93.8
	Peixoto-MT	1	3.1	3.1	96.9
	Rurópolis-PA	1	3.1	3.1	100.0
		Total	32	100.0	100.0

Table 45: São Chico – Mining workers. Money order to areas outside the mining sites.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	43.8	43.8	43.8
	No	18	56.3	56.3	100.0
	Total	32	100.0	100.0	

Table 46: São Chico – Mining workers. Money orders receivers

	Addressee	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Family (wife / children)	9	28.1	64.3	64.3
	Parents	3	9.4	21.4	85.7
	Brother/Sister	2	6.3	14.3	100.0
	Total	14	43.8	100.0	
Missing	System	18	56.3		
Total		32	100.0		

Table 47: São Chico – Mining workers. Last gold earnings (g per despescagem)

Category label	Valor [em g]	Count	Pct of Responses	Pct of Cases
	2	2	3.6	6.7
	3	3	5.5	10.0
	4	10	18.2	33.3
	5	7	12.7	23.3
	6	4	7.3	13.3
	7	5	9.1	16.7
	8	3	5.5	10.0
	9	5	9.1	16.7
	10	4	7.3	13.3
	12	3	5.5	10.0
	13	1	1.8	3.3
	15	2	3.6	6.7
	16	1	1.8	3.3
	18	1	1.8	3.3
	19	1	1.8	3.3
	24	1	1.8	3.3
	28	2	3.6	6.7
Total responses		55	100.0	183.3

2 missing cases; 30 valid cases

Table 48: São Chico – Mining workers. Experience with independent mining activities

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	14	43.8	43.8	43.8
	No	18	56.3	56.3	100.0
	Total	32	100.0	100.0	

Table 49: São Chico – Mining workers. Type of independent mining activity.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manual	7	21.9	50.0	50.0
	With machine	7	21.9	50.0	100.0
	Total	14	43.8	100.0	
Missing	System	18	56.3		
Total		32	100.0		

Table 50: São Chico – Mining workers. Illnesses in the last two months

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	13	40.6	40.6	40.6
	No	19	59.4	59.4	100.0
	Total	32	100.0	100.0	

Table 51: São Chico – Mining workers. Work interruption in the last two months.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	28.1	69.2	69.2
	No	4	12.5	30.8	100.0
	Total	13	40.6	100.0	
Missing	System	19	59.4		
Total		32	100.0		

Table 52: São Chico – Mining workers. Search for health care when ill.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.0	61.5	61.5
	No	5	15.6	38.5	100.0
	Total	13	40.6	100.0	
Missing	System	19	59.4		
Total		32	100.0		

Table 53: São Chico – Mining workers. Work accidents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	11	34.4	34.4	34.4
	No	21	65.6	65.6	100.0
	Total	32	100.0	100.0	

Table 54: São Chico – Mining Workers . Fatal work accidents witnessed

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	37.5	38.7	38.7
	No	19	59.4	61.3	100.0
	Total	31	96.9	100.0	
Missing	System	1	3.1		
Total		32	100.0		

Table 55: São Chico – Mining workers. Gold burning / roasting.

	roast or has roasted gold	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	25	78.1	78.1	78.1
	No	7	21.9	21.9	100.0
	Total	32	100.0	100.0	

Table 56: São Chico – Mining workers. Health evaluation availability.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	31	96.9	96.9	96.9
	No answer	1	3.1	3.1	100.0
	Total	32	100.0	100.0	

Table 57: São Chico – Mining workers. TV use.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Globo Sat	31	96.9	100.0	100.0
Missing	System	1	3.1		
Total		32	100.0		

Table 58: São Chico – Mining workers. Radio use.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Do not listen to the radio daily	4	12.5	18.2	18.2
	Rádio Nacional	18	56.3	81.8	100.0
	Total	22	68.8	100.0	
Missing	System	10	31.3		
Total		32	100.0		

Table 59: São Chico – Mining workers. Participation in general elections.

	Has voted for Mayor?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	9	28.1	28.1	28.1
	No	23	71.9	71.9	100.0
	Total	32	100.0	100.0	

Table 60: São Chico – Mining workers. Participation in state elections.

	Has voted for Governor?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.0	25.0	25.0
	No	24	75.0	75.0	100.0
	Total	32	100.0	100.0	

Table 61: São Chico – Mining workers . Participation in presidential elections.

	Has voted for President?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	8	25.0	25.0	25.0
	No	24	75.0	75.0	100.0
	Total	32	100.0	100.0	

Table 62: São Chico – Mining workers. Contact with violence inside the site.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	18	56.3	56.3	57.6
	No	14	43.8	43.8	100.0
	Total	32	100.0	100.0	

Table 63: São Chico – Mining workers. Witness of violent situations with death

	Has someone been killed?	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	12	37.5	66.7	66.7
	No	6	18.8	33.3	100.0
	Total	18	56.3	100.0	
Missing	System	14	43.8		
Total		32	100.0		

Crepurizinho – Village. Data

Table 64: Crepurizinho - Village. Residence type of property.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Owned	100	62.1	62.1	62.1
	Rented	18	11.2	11.2	73.3
	Loaned	43	26.7	26.7	100.0
	Total	161	100.0	100.0	

Table 65: Crepurizinho - Village. Types of use of inhabited houses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Residence	120	74.5	74.5	74.5
	Mixed	41	25.5	25.5	100.0
	Total	161	100.0	100.0	

Table 66: Crepurizinho - Village. Type of residence.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	158	98.1	98.1	98.1
	Brick	2	1.2	1.2	99.4
	Wood / Brick	1	.6	.6	100.0
	Total	161	100.0	100.0	

Table 67: Crepurizinho - Village. Type of roof in residences.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Tiles	15	9.3	9.3	9.3
	Aluminum / asbestos	145	90.1	90.1	99.4
	Wood	1	.6	.6	100.0
	Total	161	100.0	100.0	

Table 68: Crepurizinho - Village Type of floors in inhabited houses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Wood	9	5.6	5.6	5.6
	earth	14	8.7	8.7	14.3
	Cement	136	84.5	84.5	98.8
	Ceramic	2	1.2	1.2	100.0
	Total	161	100.0	100.0	

Table 69: Crepurizinho - Village. Toilet location.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Inside the house	66	41.0	41.3	41.3
	Outside the house	94	58.4	58.8	100.0
	Total	160	99.4	100.0	
Missing	System	1	.6		
Total		161	100.0		

Table 70: Crepurizinho - Village. Domestic sewage disposal.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dry sewer	86	53.4	53.8	53.8
	Open air sewage	74	46.0	46.3	100.0
	Total	160	99.4	100.0	
Missing	System	1	.6		
Total		161	100.0		

Table 71: Crepurizinho - Village. Electric power availability

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Own generator	39	24.2	24.2	24.2
	Delivered by neighbor with paying	73	45.3	45.3	69.6
	Delivered by neighbor without paying	16	9.9	9.9	79.5
	Inexistent	33	20.5	20.5	100.0
	Total	161	100.0	100.0	

Table 72: Crepurizinho - Village. Origin of the water for domestic use

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Artesian well	1	.6	.6	.6
	Well with electric bomb	68	42.2	42.5	43.1
	Open well	41	25.5	25.6	68.8
	Supplied by neighbor	44	27.3	27.5	96.3
	Others	4	2.5	2.5	98.8
	Inexistent	2	1.2	1.3	100.0
	Total	160	99.4	100.0	
Missing	System	1	.6		
Total		161	100.0		

Table 73: Crepurizinho - Village. Water storage

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Water reservoir	48	29.8	30.2	30.2
	Barrel	76	47.2	47.8	78.0
	Bucket	33	20.5	20.8	98.7
	others	2	1.2	1.3	100.0
	Total	159	98.8	100.0	
Missing	System	2	1.2		
Total		161	100.0		

Table 74: Crepurizinho - Village. Type of Water treatment.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No treatment	24	14.9	15.1	15.1
	Hypochlorite	90	55.9	56.6	71.7
	Boiling	8	5.0	5.0	76.7
	Filter	32	19.9	20.1	96.9
	Other	5	3.1	3.1	100.0
	Total	159	98.8	100.0	
Missing	System	2	1.2		
Total		161	100.0		

Table 75: Crepurizinho – Village. Garbage disposal.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	burnt	102	63.35	63.75	63.75
	Disposed at own land	8	4.97	5.00	68.75
	Disposed at someone else's land	42	26.09	26.25	95.00
	Buried at own land	3	1.86	1.88	96.88
	Buried at someone else's land	5	3.11	3.13	100.00
	Total	160	99.38	100.00	
Missing	System	1	0.62		
Total		161	100.00		

Table 76: Crepurizinho - Village. Existence of yards in inhabited houses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	134	83.2	83.2	83.2
	No	27	16.8	16.8	100.0
	Total	161	100.0	100.0	

Table 77: Crepurizinho - Village. Vegetable gardens at inhabited houses.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	34	21.1	21.1	21.1
	No	127	78.9	78.9	100.0
	Total	161	100.0	100.0	

Table 78: Crepurizinho - Village. Domestic animals.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	104	64.6	64.6	64.6
	No	57	35.4	35.4	100.0
	Total	161	100.0	100.0	

Table 79: Crepurizinho - Village. Animals for consumption.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	42	26.1	26.4	26.4
	No	117	72.7	73.6	100.0
	Total	159	98.8	100.0	
Missing	System	2	1.2		
Total		161	100.0		

Table 80: Crepurizinho - Village Agriculture

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	33	20.5	20.5	20.5
	No	128	79.5	79.5	100.0
	Total	161	100.0	100.0	

Table 81: Crepurizinho - Village Destination of agricultural produce

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Subsistence	24	14.9	72.7	72.7
	Consumption and sale	9	5.6	27.3	100.0

	Total	33	20.5	100.0	
Missing	System	128	79.5		
Total		161	100.0		

Crepurizinho – Community. Population profile. Data

Table 82: Crepurizinho - Community. Distribution by gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	274	49.5	49.5	49.5
	female	279	50.5	50.5	100.0
	Total	553	100.0	100.0	

Table 83: Crepurizinho - Community. Personal identification documents

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	473	85.5	85.8	85.8
	No	78	14.1	14.2	100.0
	Total	551	99.6	100.0	
Missing	System	2	.4		
Total		553	100.0		

Table 84: Crepurizinho – Community. Employment and gender.

		Working	
		Yes	No
Gender	Male	72.7%	13.3%
	Female	27.3%	86.7%
Total		100.0%	100.0%

Table 85: Crepurizinho – Community. Gender and employment.

		Working		Total
		Yes	No	
Gender	Male	91.4%	8.6%	100%
	Female	38.0%	62.0%	100%

Crepurizinho – Community. Dietary habits. Data

Table 86: Crepurizinho - Community. Weekly consumption of fish

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	3	1.9	1.9	1.9
	1	2	1.2	1.2	3.1
	2	21	13.0	13.0	16.1
	3	46	28.6	28.6	44.7
	4	16	9.9	9.9	54.7
	5	21	13.0	13.0	67.7
	6	7	4.3	4.3	72.0
	7	45	28.0	28.0	100.0
	Total	161	100.0	100.0	

Table 87: Crepurizinho – Community. Weekly consumption of frozen fish

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	33	20.5	20.5	20.5
	1	53	32.9	32.9	53.4
	2	42	26.1	26.1	79.5
	3	26	16.1	16.1	95.7
	4	3	1.9	1.9	97.5
	5	2	1.2	1.2	98.8
	6	2	1.2	1.2	100.0
	Total	161	100.0	100.0	

Table 88: Crepurizinho – Community. Weekly consumption of chicken.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	26	16.1	16.1	16.1
	1	45	28.0	28.0	44.1
	2	42	26.1	26.1	70.2
	3	26	16.1	16.1	86.3
	4	8	5.0	5.0	91.3
	5	9	5.6	5.6	96.9
	6	2	1.2	1.2	98.1
	7	3	1.9	1.9	100.0
	Total	161	100.0	100.0	

Table 89: Crepurizinho - Community. Weekly consumption of egg.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	43	26.7	26.7	26.7
	1	38	23.6	23.6	50.3
	2	30	18.6	18.6	68.9
	3	20	12.4	12.4	81.4
	4	9	5.6	5.6	87.0
	5	6	3.7	3.7	90.7
	6	1	.6	.6	91.3
	7	14	8.7	8.7	100.0
	Total	161	100.0	100.0	

Table 90: Crepurizinho – Community. Weekly consumption of rice

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	1	.6	.6	.6
	5	1	.6	.6	1.2
	6	1	.6	.6	1.9
	7	158	98.1	98.1	100.0
	Total	161	100.0	100.0	

Table 91: Crepurizinho – Community. Weekly consumption of pasta

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	42	26.1	26.1	26.1
	1	36	22.4	22.4	48.4
	2	35	21.7	21.7	70.2
	3	21	13.0	13.0	83.2
	4	4	2.5	2.5	85.7
	5	1	.6	.6	86.3
	6	3	1.9	1.9	88.2
	7	19	11.8	11.8	100.0
	Total	161	100.0	100.0	

Table 92: Crepurizinho - Community. Weekly consumption of beans

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	10	6.2	6.2	6.2
	1	8	5.0	5.0	11.2
	2	10	6.2	6.2	17.4
	3	14	8.7	8.7	26.1
	4	4	2.5	2.5	28.6
	5	9	5.6	5.6	34.2
	6	6	3.7	3.7	37.9
	7	100	62.1	62.1	100.0
	Total	161	100.0	100.0	

Table 93: Crepurizinho – Community. Weekly consumption of milk

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	19	11.8	11.8	11.8
	1	5	3.1	3.1	14.9
	2	4	2.5	2.5	17.4
	3	8	5.0	5.0	22.4
	4	2	1.2	1.2	23.6
	5	9	5.6	5.6	29.2
	7	114	70.8	70.8	100.0
	Total	161	100.0	100.0	

Table 94: Crepurizinho - Community. Weekly consumption of vegetables

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	31	19.3	19.3	19.3
	1	22	13.7	13.7	32.9
	2	15	9.3	9.3	42.2
	3	19	11.8	11.8	54.0
	4	12	7.5	7.5	61.5
	5	6	3.7	3.7	65.2
	6	7	4.3	4.3	69.6
	7	49	30.4	30.4	100.0
	Total	161	100.0	100.0	

Table 95: Crepurizinho - Community. Weekly consumption of fruits

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	58	36.0	36.0	36.0
	1	29	18.0	18.0	54.0
	2	20	12.4	12.4	66.5
	3	24	14.9	14.9	81.4
	4	7	4.3	4.3	85.7
	5	4	2.5	2.5	88.2
	6	4	2.5	2.5	90.7
	7	15	9.3	9.3	100.0
	Total	161	100.0	100.0	

Table 96: Crepurizinho - Community. Weekly consumption of manioc flour

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	28	17.4	17.4	17.4
	1	2	1.2	1.2	18.6
	2	6	3.7	3.7	22.4
	3	4	2.5	2.5	24.8
	4	2	1.2	1.2	26.1
	5	2	1.2	1.2	27.3
	7	117	72.7	72.7	100.0
	Total	161	100.0	100.0	

Table 97: Crepurizinho - Community. Weekly consumption of manioc

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	85	52.8	52.8	52.8
	1	29	18.0	18.0	70.8
	2	24	14.9	14.9	85.7
	3	7	4.3	4.3	90.1
	4	3	1.9	1.9	91.9
	5	5	3.1	3.1	95.0
	6	3	1.9	1.9	96.9
	7	5	3.1	3.1	100.0
	Total	161	100.0	100.0	

Crepurizinho – Mining Worker’s Profile. Data

Table 98: Crepurizinho – Mining workers. Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20	1	3.2	3.6	3.6
	24	1	3.2	3.6	7.1
	29	2	6.5	7.1	14.3
	30	1	3.2	3.6	17.9
	32	1	3.2	3.6	21.4
	33	1	3.2	3.6	25.0
	35	1	3.2	3.6	28.6
	36	2	6.5	7.1	35.7
	37	1	3.2	3.6	39.3
	38	1	3.2	3.6	42.9
	40	3	9.7	10.7	53.6
	42	3	9.7	10.7	64.3
	43	3	9.7	10.7	75.0
	46	1	3.2	3.6	78.6
	47	1	3.2	3.6	82.1
	48	2	6.5	7.1	89.3
	50	1	3.2	3.6	92.9
	58	1	3.2	3.6	96.4
	62	1	3.2	3.6	100.0
	Total	28	90.3	100.0	
Missing	System	3	9.7		
Total		31	100.0		

Table 99: Crepurizinho – Mining workers. Civil Status.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	21	67.7	67.7	67.7
	Married	4	12.9	12.9	80.6
	Separated	3	9.7	9.7	90.3
	Living with a partner	3	9.7	9.7	100.0
	Total	31	100.0	100.0	

Table 100: Crepurizinho – Mining workers. State of birth.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	PA	6	19.4	19.4	19.4
	MA	17	54.8	54.8	74.2
	PI	4	12.9	12.9	87.1
	CE	1	3.2	3.2	90.3
	BA	1	3.2	3.2	93.5
	RO	1	3.2	3.2	96.8
	TO	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Table 101: Crepurizinho – Mining workers. Reason for choosing this site.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	High gold production	6	19.4	19.4	19.4
	Knew the owner	5	16.1	16.1	35.5
	Friends suggested	14	45.2	45.2	80.6
	peaceful site	1	3.2	3.2	83.9
	Other reasons	5	16.1	16.1	100.0
	Total	31	100.0	100.0	

Table 102: Crepurizinho – Mining workers Place of residence.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	City	7	22.6	22.6	22.6
	Mining site	20	64.5	64.5	87.1
	Crepurizinho / village	4	12.9	12.9	100.0
	Total	31	100.0	100.0	

Table 103: Crepurizinho – Mining workers. Year that began working with gold mining

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1971	1	3.2	3.2	3.2
	1972	1	3.2	3.2	6.5
	1973	1	3.2	3.2	9.7
	1979	1	3.2	3.2	12.9
	1980	1	3.2	3.2	16.1
	1981	3	9.7	9.7	25.8
	1982	3	9.7	9.7	35.5
	1983	4	12.9	12.9	48.4
	1984	2	6.5	6.5	54.8
	1985	2	6.5	6.5	61.3
	1986	4	12.9	17.9	74.2
	1987	1	3.2	3.2	77.4
	1988	1	3.2	3.2	80.6
	1989	1	3.2	3.2	83.9
	1990	2	6.5	6.5	90.3
	1998	2	6.5	6.5	96.8
	2002	1	3.2	3.2	100.0
	Total	31	100.0	100.0	

Table 104: Crepurizinho – Mining workers. Previous economic activity.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agriculture on own land	6	19.4	19.4	19.4
	Agriculture on alien land	8	25.8	25.8	45.2
	Trader / Self-employed	10	32.3	32.3	77.4
	Clerk	1	3.2	3.2	80.6
	Unemployed	1	3.2	3.2	83.9
	Others	5	16.1	16.1	100.0
	Total	31	100.0	100.0	

Table 105: Crepurizinho – Mining workers How is mercury harmful to health?

Vapor	37.5%
Blood contamination	16.7%
Does not know	16.7%
Pollution	12.5%
Contamination	4.2%
Water Contamination	4.2%
Blood illness	4.2%
Evaporation	4.2%

Table 106: Crepurizinho – Mining workers. Sources of information on mercury.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Friends	5	16.1	21.7	21.7
	TV / Radio	15	48.4	65.2	87.0
	Mining site owner	2	6.5	8.7	95.7
	Other source	1	3.2	4.3	100.0
	Total	23	74.2	100.0	
Missing	System	8	25.8		
Total		31	100.0		

Table 107: Crepurizinho – Mining workers. How does gold mining harm the environment?

Deforestation	33.3%
Mercury contamination	13.3%
Deforestation and pollution	13.3%
Pollution	13.3%
River	6.7%
Deforestation/Sanding	6.7%
Devastation	6.7%
Death and illness	6.7%

Table 108: Crepurizinho – Mining workers. Predicted length of stay in the sites

half year	2	6.9%
1 year	4	13.8%
2 years	3	10.3%
4 years	1	3.4%
5 years	1	3.4%
10 years	1	3.4%
It depends	1	3.4%
As little as possible	1	3.4%
Not long	2	6.9%
Not predicted	13	44.8%