REPORT ON HEALTH WORK IN THE YANOMAMI AREA

MEDICAL CARE AND DENTAL HEALTH

AREA 15 (DEMINI PROJECT) AND OTHER AREAS

JANUARY 1990 TO MAY 1991

CCPY
Commission for the Creation of the Yanomami Park

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"Disease is the worst enemy in the world.
The Yanomami, my people, are dying,
but you, the whites, the gold-seekers,
you too are dying.
Omã, the Creator, put the minerals beneath the Earth,
because it is cold there, but then along comes the gold-seeker
and takes the minerals, the tantalite, up to the surface.
There, in the heat of the air, they give off a poison
which causes many unknown diseases,
which the white man cannot cure.
They take out the minerals so that the Americans
can use them to make rockets, but they don't realise
that they are spreading the poison throughout the world.
And the world will come to an end, will die."

Davi Kopenawa Yanomami

Davi, looking sad and tired, gave vent to
this declaration on the day that Rebeca
died, while Roberto was carrying the body,
wrapped in palm leaves, away into the forest.

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MEDICAL CARE

AREA 15 (DEMINI PROJECT) AND OTHER AREAS

JANUARY 1990 TO MAY 1991

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I

1990
THE INSTITUTIONAL CONTEXT

From the point of view of the Yanomami question, it could be observed that 1990 was marked by some moves towards tackling the issue by Brazilian institutions responsible for aspects of the country's policy towards indigenous peoples.

Thanks to the mobilisation of public opinion and to the pressure brought to bear by non-governmental bodies in Brazil and abroad, not to mention that of creditor countries of Brazil's foreign debt, the government took some steps of note in the institutional context:

1. The creation of *Operação Selva Livre* ("Operation Free Jungle") to carry out the presidential order to destroy the illegal airstrips and remove the *garimpeiros* (gold-seekers) from the Yanomami area.

2. The creation of the Yanomami Emergency Health Plan (PEASY)

3. The creation of the Yanomami Health Project (PSY).

The removal of invaders from their territory (not to mention its effective demarcation and prservation), which represents the basic principle underlying all other aspects of the Yanomami's survival, set the scene for interaction and confrontation between various political and institutional forces.

Though *Operação Selva Livre* was officially set in motion by the Federal Police and government Indian agency Funai with the support of the Army and Air Force (as determined by the 7th Federal Court, of the Federal District), under the supervision of the Attorney General's Office, innumerable problems in its execution also made themselves felt:

1. There were considerable difficulties in securing the approval of funding and delays and bureaucratic obstacles to its release by the Economy Ministry;

2. Local authorities explicitly challenged federal orders (Roraima Governor Ottomar de Souza Pinto mobilized his state's Military and Civil Police units, totalling 1,300 men), through armed obstruction of the Federal Police agents' efforts to carry out the actions required by the operation;

3. The numbers of the Federal Police units mobilised were insignificant (a total of 20 men in the field), as was the support provided by the Armed Forces (from the Surucucus base), given the enormous dispersal of the *garimpeiros* and airstrips over the extent of Yanomami territory. For obvious reasons, such factors made effective control impossible, making it easier for the *garimpeiros* to carry out their successive re-invasions and reconstruction of airstrips that had been blown up.

4. The convergence of the factors set out above meant that even the already inadequate scale of the operations actually carried out was subject to periodic interruptions, making them even less effective (encouraging re-invasions) and meaning that the resources employed up to that point had to all intents and purposes been wasted.

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During 1990, all the responsibility for formulating and executing official indigenous policy continued to be concentrated in the hands of Funai; all the field decisions remained under its control, despite clearly-stated indications that it was incapable of sustaining, in practice, the basic actions necessary for carrying them out in so many separate areas of responsibility (health, education, land rights, environmental preservation, "community development" and legal representation).

Though the Brazilian President took the first steps in setting in motion the process of transferring medical care for indigenous peoples to the Health Ministry's area of responsibility (Decree Nº 23, of 4 February 1991), even creating a ministerial working party responsible for drawing up the steps necessary to put it in practice, the official definition of the political-administrative structure which would be responsible for these programmes (intended to come under the control of FUNASA, the National Health Foundation) took some time to come into effect (see Appendix 1 for Ministerial Decree Nº 316 of 11 April 1991). Until April 1991 FUNASA health teams' actions in the Yanomami area were sporadic and very scattered; it was only in May 1991 that the rhythm of its work accelerated more significantly, with the simultaneous deployment of five health teams in the field.

It was thus a nebulous and shifting institutional context, in which the areas of action and responsibilities of institutions and official figures became hazy, that made up the background against which all the health work carried out in Yanomami territory during 1990 unfolded.

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II

1990
CCPY'S ACTIVITIES

1. The Yanomami Emergency Health Care Plan (PEASY)

Organised by government Indian agency Funai and by the Health Ministry and carried out between the beginning of January 1990 and mid-February of that year, the PEASY was a response to the pressure and demands from important sectors of society, organised around the human rights movement *Ação pela Cidadania* (Action for Citizenship). Its actions were closely followed by the media, causing a considerable stir among international public opinion. The following groups took part directly in the activities: The Commission for the Creation of the Yanomami Park (CCPY), The Indigenous Missionary Council (CIMI), The Diocese of Roraima, The School of Public Health/Oswaldo Cruz Foundation (Nespi/Fiocruz), The Cultural Research Unit of the University of Brasília (Nupec/UnB), the National Indian Foundation (Funai) and the Brazilian Air Force (FAB).

It was marked by quick and discontinuous actions, where the teams essentially provided immediate emergency care in the worst-affected areas (in some of the villages, the rate of malaria-induced morbidity had reached 91% at the time). The heroic rescues of dying Yanomami provided scenes which were considered historic by international public opinion.

The teams had inadequate logistical support, especially in the area of transportation. Even for actions which were expected to be fast and partial, the territorial coverage was clearly insufficient (areas covered: Ericó-Waicás, Surucucus and Paapiú).

Once the insufficiency of the actions carried out and the seriousness of the situation had become clear, Funai granted permission for some teams to return to the area in the period between March and August to continue the Emergency Project (areas covered: Toototobi, Aracás, Ajuricaba, Paapiú, Surucucus, Demini).

The activities of the PEASY in which CCPY's teams took part are set out in the table *"Yanomami Health Project (PSY)-CCPY - Activities Summary Jan/90-May/91"* (Appendix 2).

2. The Yanomami Health Enquiry

In August the Attorney General's Office, assisted by the São Paulo State Health Secretariat and with the technical support of CCPY, carried out a survey of available data and a field investigation with the objective of setting up an enquiry into the Yanomami's health situation, in order to evaluate the impact of the invasion of illegal gold-miners (*garimpeiros*), and the results of the operation to remove the invaders (*Operação Selva Livre*) and of the PEASY, as well as of proposing concrete measures for the establishment of a programme of more effective action.

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3. The Demini Community Health Project

In the light of the ineffectiveness of government interventions, Davi Yanomami had in 1989 already proposed the setting up of the Yanomami's own autonomous health project, which would have CCPY's technical support. The project's political, methodological and cultural identity ("cultural", since its planning was deeply influenced by the Yanomami perception of cause and effect in the case of sickness affecting the whole group and of the paths which lead to the "cure" of its origins and implications - including in their cosmological dimension) could at this point be defined as:

a) for close and active cooperation between the health teams with their practices and the *shabori* (shamans or medicine men) and Yanomami traditions;

b) for funding to be obtained and administered independently from that of the official programmes;

c) for the area to be covered to be defined by the inter-tribal alliances of Davi's own community, *Watorikthere*, (and not by criteria which are purely "technical" - that is, geographical, managerial, operational, etc);

d) for the project to aim to develop a continuous medical and dental health care programme, breaking with the vicious circle of partial and sporadic emergency actions;

e) for the project to aim to promote health care in the villages, putting an end to the tendency of drawing the Yanomami to gather and live permanently around the Funai posts and the missions, which deepens their dependency, diminishes their cultural identity and worsens their health conditions;

f) for the project to aim not only to follow a constant timetable of trips by the health teams, but also to provide a minimum number of permanent health personnel in the area so as to cover the intervals between the teams' visits, guaranteeing basic health care and on-site monitoring against epidemics.

The "Demini Project" therefore covers not only the villages situated in the Demini river basin, but also the regions of Toototobi, Aracás and Ajuricaba (which represents a population of some 800 to 1,000 Yanomami receiving medical care).

In 1990, four teams worked in the area, in the months of January, February, April, May, June, October, November and December (Appendix 2).

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III

1991
THE INSTITUTIONAL CONTEXT

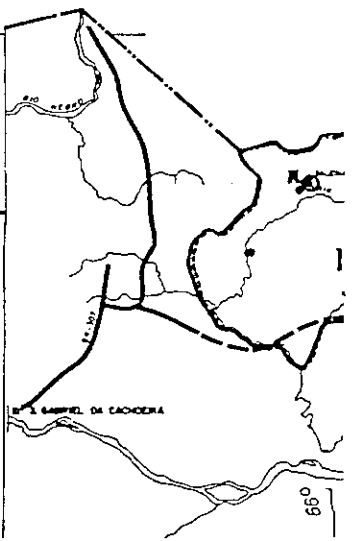
1. The Yanomami Health Project

YANOMAMI INDIGENOUS PARK - SPECIAL LOCAL HEALTH SYSTEM ORGANIZATION OF AREAS DEFINED BY INTER-COMMUNITY RELATIONS

Nº	AREAS OF INTERCOMMUNITY RELATIONS	PROBABLE OPERATIONAL BASES	ACCESS BY
01	Birisytheri (Aykamtheri)/Tisiporatheri/Xilimifiketheri	Surucucu Post	Airstrip
02	Moxafetheri/Kathaloatheri	Surucucu Post	Airstrip
03	Botomatatheri	Surucucu Post	Airstrip
04	Parafuritheri/Iromopetheri	Parafuri Airstrip	Closed-down garimpeiro airstrip
05	Xamatari (to be investigated)	Parafuri Airstrip	Closed-down garimpeiro airstrip
06	Xideatheri/Aramabitheri	Xidea Airstrip	Closed-down garimpeiro airstrip
07	Homoxitheri/Amokoabetheri/Arabitheri/Bahaytheri/ Konkalauhudutheri	Upper Mucajaí Airstrip	Closed-down garimpeiro airstrip
08	Paapiu	Paapiu Post	Airstrip
09	Palimiutheri/Cutaiba River	Palimiu Mission	Airstrip
10	Waicas/Aracaçá River (to be investigated)	Waicás Post	Airstrip
11	Auaris/Olomai/Tucuxim/Xikoitebé	Auaris Mission	Airstrip
		Olomai Airstrip	Airstrip
12	Ericó River/Upper Uraricaá River /Surubai	Ericó Post	Airstrip
13	Middle and Low Mucajaí River	Mucajaí Post	Airstrip
		Mucajaí Mission	Airstrip
14	Catrimani/Jundiá River/Ajarani/Opiktheri	Ajarani Post	Airstrip/Road
		Catrimani Mission	Airstrip/Road
15	Demini/Toototobi/Taraú River/Aracá/Ajuricaba	Demini Post	Airstrip
		Ajuricaba Post	River
		Aracá Mission	Airstrip
		Toototobi Mission	Airstrip
16	Marari/Padauari River	Marari Mission	Airstrip
17	Marauiá/Apuí	Marauiá Post	River
		Apuí Project	River
18	Maturacá/Iá/Maiá	Maiá Post	River
		Maturacá Mission	Airstrip

1:1,000,000 scale maps of Brazil - IBGE/1982
Drawn up by the PIB/CEDI team and CCPY
November 1990

0 20 40 60 80 100 km



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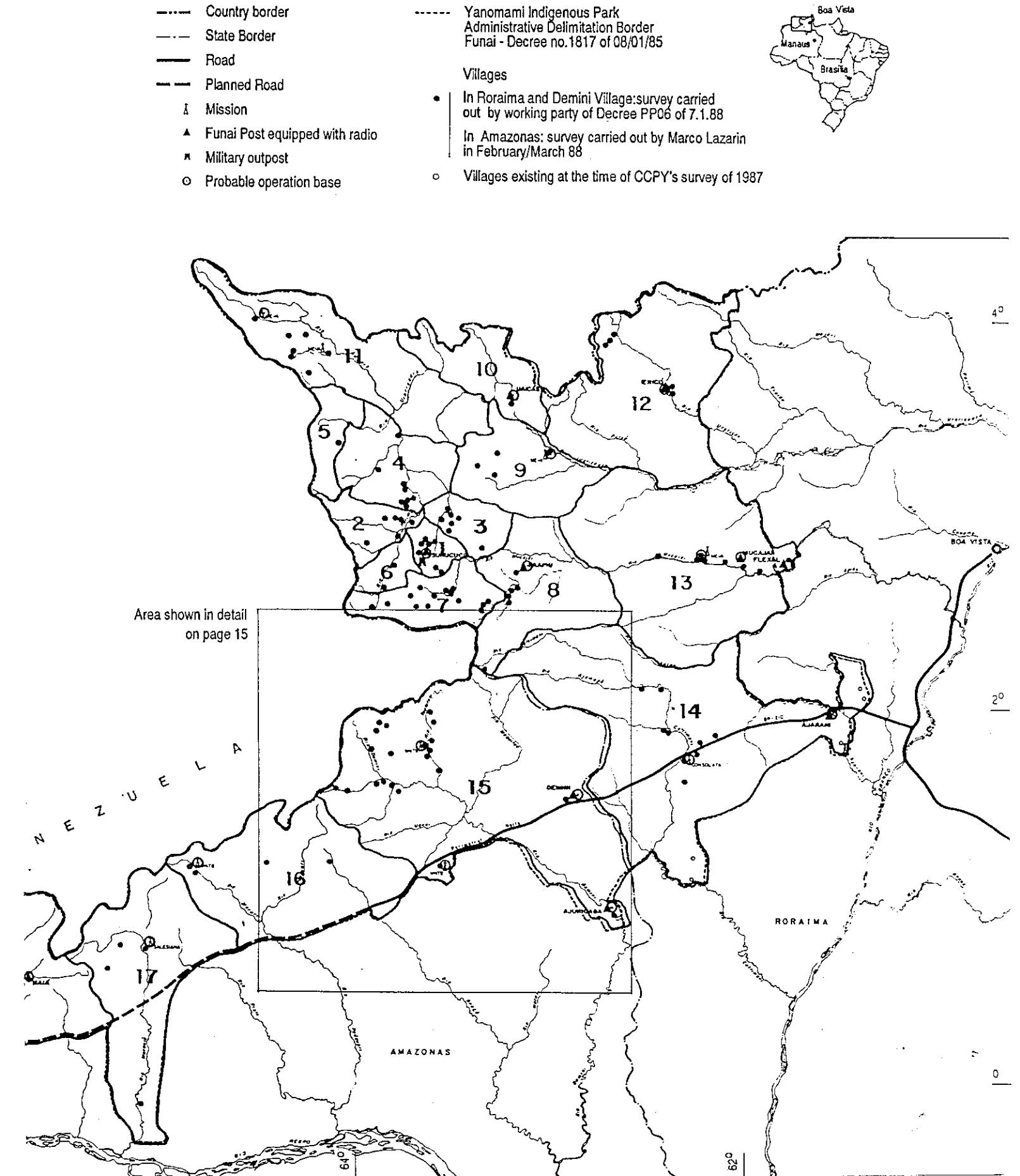
Country border
State Border
Road
Planned Road
Mission
Funai Post equipped with radio
Military outpost
Probable operation base
Yanomami Indigenous Park
Administrative Delimitation Border
Funai - Decree no.1817 of 08/01/85
Villages
In Roraima and Demini Village:survey carried out by working party of Decree PP06 of 7.1.88
In Amazonas: survey carried out by Marco Lazarin in February/March 88
Villages existing at the time of CCPY's survey of 1987
Boa Vista
Manaus
Brasília
Area shown in detail on page 15
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
BOA VISTA
RORAIMA
AMAZONAS
4°
2°
0
64°
62°

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Held in the Nursing School of the University of Amazonas, on the initiative of and coordinated by the Health Ministry, the Workshop on the Pre-Operationalisation Stage of the Yanomami Health Project (PSY) took place between 30 January and 2 February 1991.

The Workshop was a success. It brought together, around an agenda whose objectivity was a matter of consensus, all the institutions and groups which had (or were to have) a committment to health work with the Yanomami.

The meeting's objective was to establish the following: the Project's philosophical, political and operational principles; the definition of each group's area of operation and its insertion in the structure of the PSY; the attributions and mutual responsibilities of all concerned, the forums for discussion and the mechanisms for each group to participate in them; the principles and basic methodology for the processes for evaluation and control of the effectiveness of the operations and of the performance of the other areas of the system; the standardisation of basic technical and operational procedures; the assessment of what the execution of the project would require in the medium and long terms.

Yanomami territory was to be divided into various (initially, 18) health care "poles", for which the institutions and groups would be responsible, marked out on the basis of areas defined according to criteria appropriate to the dynamics of the networks of inter-community alliances. The definition of these areas should necessarily be an ongoing process, and one subject, therefore, to the movements of these communities and alterations in their interrelationships - which would certainly imply successive modifications in the configuration of these poles.

Each pole would have a "base", responsible for the flow of information and for the monitoring of epidemics in the area, for the planning and execution of routine operations and for supporting the work of the health teams.

The Surucucus base would be equipped by FUNASA in such a way as to be able to function as a "Mixed Unit" in the role of routine secondary and tertiary reference backup for the poles.

In accordance with what was set out in the PSY's organization chart (Appendix 3), FUNASA was to be responsible for the General Administration of the project, for the Local System Administration and for the Management of the Mixed Unit, as well as participating directly in the field work with its own teams and resources (in strategic areas to be specified) and carrying out full-time supervision and articulation, at all levels, with the institutions and groups involved.

The General Administration was to be responsible for the institutional and political support of the PSY at federal level. That is, for articulating the PSY with the sectors of FUNASA responsible for indigenous health policy within SUS (the Single Health System, the national health service which resulted from the unification of all Brazil's public health resources and equipment), monitoring it and guaranteeing that it continued to operate in harmony with the principles defined (by the Constitution) as guiding Brazilian state policy in relation to indigenous peoples.

The General Administration was to receive the technical and political advice of the Intersectorial Indian Health Commission, made up of representatives of non-governmental

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institutions and groups involved in nationally-recognised work and experiments in the field of health care for indigenous peoples. It was through this Commission that non-governmental organisations connected to the indigenous "cause" would participate in the ongoing evaluation of the PSY's progress.

The Regional Coordination (run by a multi-institutional team, including the federal, state and municipal bodies operating in the area) was, according to what was discussed at the Workshop, to be reponsible not only for the planning and administration of FUNASA's direct field activities, but also for the ongoing strategic planning of the Project as a whole: organizing and developing the flow of information from all areas of Yanomami territory, evaluating and supervising the teams' work, evaluating each pole's operational conditions, taking the final (non-routine) decision on the strategic objectives to be acheived in each area, as well as recommending or deciding on the respective measures necessary to acheive them.

The work of the Regional Coordination was to be monitored by the Community Commission, made up of representatives of the Yanomami and of the other organizations involved in the provision of medical care. This Commission would not only provide technical advice, participating in the in the Project's local strategic planning, identifying administrative and operational problems and proposing solutions, but above all would fulfill the role of the PSY's immediate political guarantor, checking on a day-by-day basis its adequacy and its appropriateness to the real needs of the Yanomami.

The Local System Administration was to be responsible for managing the operational integration of all the poles with the Management of the Mixed Unit (the Surucucus base) and with the Regional Coordination. According to the PSY's organization chart, CCPY was to participate in the Intersectorial Indian Health Commission (General Administration) and in the Community Commission (Regional Coordination), as well as acting directly in the area of "Pole 15" (Demini-Tootobi) within the area of action planned for the "Demini Project". It was decided that priority in the Pole 15 health care would at this point be given to the Tootobi region (using the base of the Brazil New Tribes Mission), given its strategic location in a region which was much more densely-populated (with an estimated population of 500 inhabitants against Demini's 82), had intense population movement and a much more serious epidemiological situation, which made it the priority for medical attention in the area.

Although the government still did not mention clear objectives and numbers during the Manaus Workshop, it did undertake the committment to participate directly in health work in the field, promising as of that moment to provide the hospital and clinic backup, as well as incorporating (and having brought back to life...) the infrastructure, personnel and equipment in the region of the Public Health Campaigns Superintendency (SUCAM), the Public Health Service Foundation (FSESP) and the remains of the former Funai Health Division, placing them at the PSY's disposal. The possibility of the Air Force's collaborating with the organization of transport was raised.

The Health Ministry took on, therefore, the responsibility for the initial work of planning, the

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setting in motion of the appropriate administrative and legal steps for officially installating and putting into operation the structures responsible for the General Administration, the Regional Coordination, the Local System Administration and the Management of the Mixed Unit. The timetable announced foresaw that these steps and the planning for priority areas would be complete by the end of March 1991, with the field operations beginning in April1991.

In May 1991 the first palpable signs that the timetable's steps were under way came when five multi-institutional teams coordinated by FUNASA (with the participation of the following other organizations: CCPY, the Diocese of Roraima, Médecins du Monde and the University of Brasília) went into the field. It is worth noting, however, that the effective setting in motion of the administrative steps necessary for FUNASA's absorbtion of SUCAM, FSESP and the Funai Health Division, as well as the release of the first instalments of its budget, also in May 1991, coincided with "top-level" changes in the Foundation's personnel - that is, its president and vice-president (...).

However this may be, the work of the PSY is now officially under way in the offices of the Health Ministry. One hopes that FUNASA will be taking the measures necessary for the formation of both the Intersectorial Indian Health Commission (General Administration) and the Community Commission (Regional Coordination) as soon as possible, since these bodies are indispensable for the backup and technical, administrative, operational and theoretical evaluation of the PSY. They are indipensable in providing the bare essential of guarantees of the quality level of the work, which is a decisive factor in determining its legitimacy in the eyes of public opinion and its support by non-governmental groups (which in this case are responsible for contributing an extremely important proportion of the funds available for the PSY).

The results of this are awaited.

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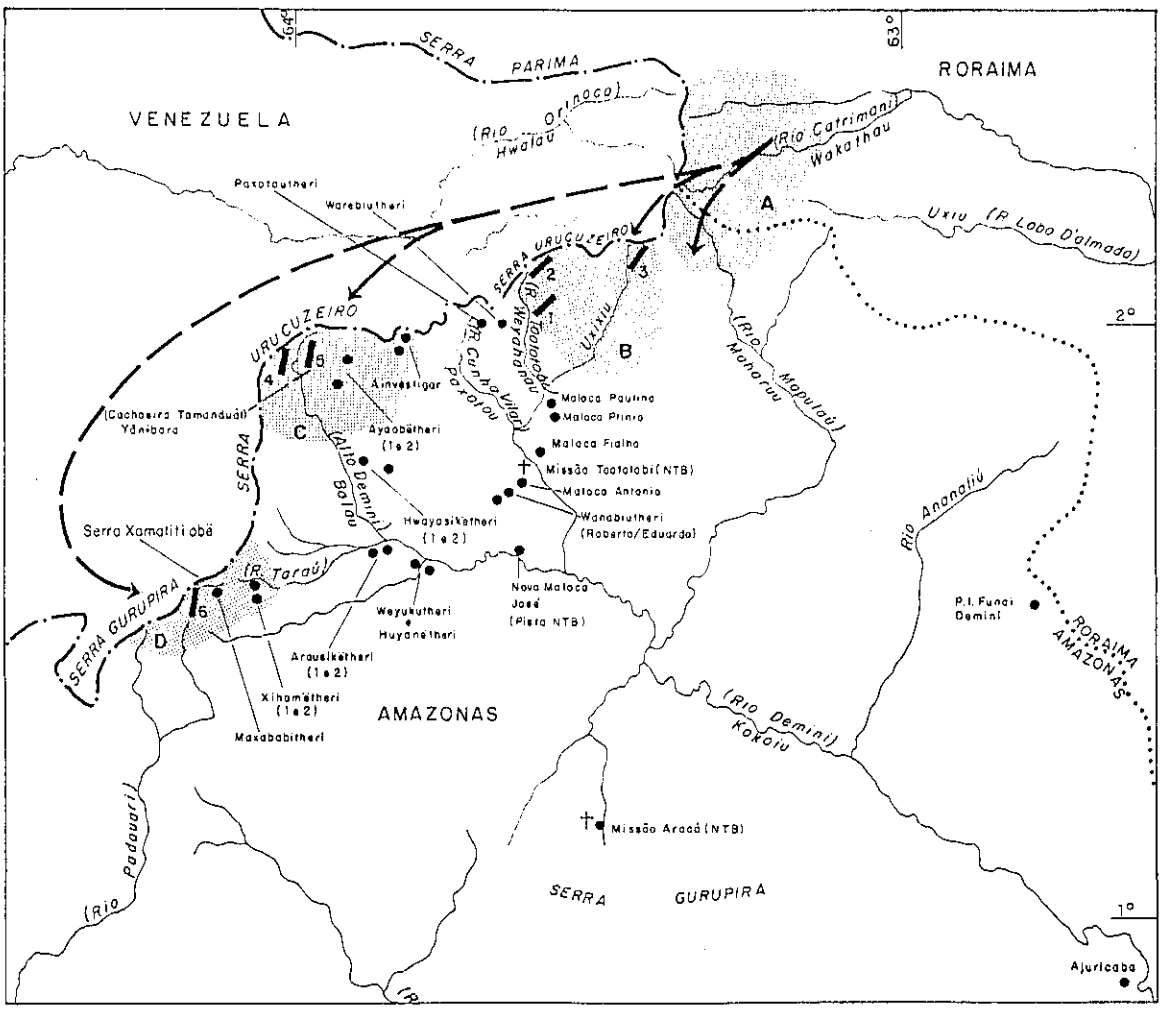
IV

1991
CCPY'S ACTIVITIES

AREA 15 - DEMINI HEALTH PROJECT
GARIMPEIRO PENETRATION OF AMAZONAS STATE
DECEMBER 1990
Source: Davi Yanomami and Indians of the Tootobi region



- Approximate location of Indian villages
  (1988 Funai/Army survey plus data from the December 1990 team for Tootobi)
- Areas of garimpo activity
- Airstrips (1 to 6)

Drawn up by Bruce Albert in collaboration with CCPY
NB: "Maloca" = communal round house inhabited by a whole community

0 20 40 60 km

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CCPY's Demini Project activities up to May 1991 were governed by the priority given to the so-called "Area 15". Aside from the team field trips set out in Appendix 2, from 21 February 1991 the Demini Project had access to the permanent presence in the field (in Watoriktheri) of a nursing professional.

In the context of the wider area covered by the PSY, however, CCPY has placed itself at the disposal of FUNASA, providing technical advice and participating directly in the appropriate bodies within the structure of the Project, as well as supporting, out of its own funds, the work of three doctors in the field outside "Area 15" as follows:

Dr. Ivone A. Menegola
26/2 to 8/3/91 - Surucucus
8 to 15/3/91 - Olomai
18/3 to 6/4/91 - Auaris
7 to 30/4/91 - Boa Vista, advising on the organization of the Regional Coordination.

Dr. Marcos A. Pellegrini
28/3 to 11/4/91 - Surucucus

Dr. Alvaro Casemiro Alves Braz
28/3 to 7/6/91 - Surucucus

As one can observe, though it lies outside the area of activity laid down during the Manaus Workshop (Area 15), CCPY's support for work in several other areas, in emergency situations such as those set out above, has continued in many cases to be the only alternative capable of permitting the rapid deployment of teams to the field.

Even in the case of the work of advising the Regional Coordination in Boa Vista, without CCPY's intervention the delay in the arrival of funding from FUNASA to pay the various health professionals summoned to participate (as was the case for Dr. Ivone Menegola) would have resulted in considerable delay even for the work of organizing the PSY at a local level, which would have meant an even greater delay in the teams' arrival in the field, since the first instalments of FUNASA's own funding were not made available for the Project until May 1991.

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V

EVALUATION OF THE HEALTH CARE WORK UNDERTAKEN IN THE PERIOD JANUARY 1990 - MAY 1991

1. Working Conditions in the Field

The following are among the most serious of the problems which are generally involved in the planning and implementation of work schedules in Yanomami territory (aside from those related to managerial or financial aspects, which affect above all the official programmes):

Transport

Access to the vast majority of areas is only possible by air. In many cases, only a light helicopter (of the *Esquilo* type) permits access or landing in adequate conditions (without destroying the Yanomami's huts and vegetable plots), since a large number of villages are located in steep terrain (such as that in Surucucus) and with no airstrips nearby. One can easily imagine how this factor comes to be responsible for a large slice of the budgets allocated to health care.

Interpreters

Presently, there is only a small number of personnel available who know the language and are able to accompany the teams in the field. Although they are indispensable elements in the composition of health teams, this will continue to be the case as long as no progress is made towards training full time health teams, which would make possible an investment in the organization of basic Yanomami language training programmes. The shortage of interpreters is often the factor which results in it being impossible to implement planned actions.

Health Personnel

The recruitment of health personnel to form the teams from the state of Roraima itself has proved difficult due to various reasons, such as the simple fact that they are practically unavailable in the local job market, the political instability of the region and indeed the lack of interest in submitting themselves to such difficult working conditions. The vast majority of personnel who are willing to work in the region have permanent employment contracts in other states and are usually attached to research institutions and /or to the civil service (which allows them greater flexibility of action and justifies their working outside their home state). Such conditions considerably restrict the availability of potential personnel for the health teams.

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It should be noted that throughout Brazil the civil service's hiring of new personnel has been virtually suspended by order of President Collor. This means that the National Health Foundation (FUNASA) cannot form its own teams for the Yanomami Health Programme (PSY), having available only those they are able to call on from among the local personnel of Funai, the Public Health Service Foundation (FSESP) and the Health Ministry's Public Health Campaigns Superintendency (SUCAM) - which in the state of Roraima does not mean much in terms either of quality or of quantity - besides those who may occasionally be ceded as part of the cooperation of other public and /or independent institutions (...). In the case of training procedures (such as for the diagnosis and treatment of malaria) and the refresher training of health personnel in specific preparation for work in the field, CCPY has sought reference and cooperation from the following institutions whose competence and commitment are recognised throughout Brazil:

- Oswaldo Cruz Foundation - Rio de Janeiro,
- Endemic Disease Control Superintendency (SUCEN) - São Paulo,
- Manaus Tropical Hospital - Amazonas,

besides FUNASA itself in Boa Vista (Roraima).

Standardization of Procedures, Data Collection and Data Processing

Since the intention is that all health work in the Yanomami territory should from now on be planned, implemented and monitored according to the logic of working jointly, the standardization of procedures has become a fundamental pre-requisite at all operational levels of the system.

This question acquires even greater importance and weight once one has taken a brief look at the collection of reports and data already produced on the Yanomami: incomplete population surveys which are out of date or which are simply non-existent for many regions (some of which, such as the upper Demini, are still totally unknown), wide diversity of criteria used for clinical action, heterogeneous records of diagnoses and procedures, very variable (and often inadequate) levels of preparation of the personnel involved. Besides seriously affecting the quality of the work itself, this situation makes it impossible to obtain an adequate vision of the Yanomami territory as a whole, making both the planning and the evaluation of the PSY's progress impossible (jeopardising in turn the credibility and effectiveness of the various sub-projects included in it).

Food Supplies

In those situations where medical care has to be provided to the population of several villages who have simultaneously come to seek aid in the places where the health teams are present, it is frequently necessary to provide some kind of supplementary nourishment for the Yanomami who are to be attended, since there is the risk of groups leaving as a result of the fact that food from the vegetable gardens and from hunting and fishing in the surrounding areas rapidly grows scarce during these (unusual) periods of sudden and enforced population concentration. Frequently, above all in the case of villages suffering severely from the effects of *garimpeiro* activity, Yanomami are found in a state of undernourishment and physical debilitation which has reached the point

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where all activities related to acquiring food are no longer possible. In these conditions, the supply of supplementary nourishment constitutes an absolute priority for the teams' curative work (the situations described above were recently experienced by the teams who worked in Toototobi from 10/11 to 07/12/90 and in Auaris from 15/03 to 15/04/91; in both cases, it was necessary to request that CCPY urgently send food products to these areas - this was an essential measure in guaranteeing that the work was able to go ahead).

Equipment and Medicines

Experience has shown that all equipment and most of the medicines used by the teams have had to be acquired outside the state of Roraima. As a result of various factors, the market even of basic medicines is very unstable and disorganized in the state. Many urgent requests to send medicines not available there have frequently arrived at CCPY in São Paulo (at times from FUNASA itself in Boa Vista).

It is worth noting that during the period covered by this report, besides CCPY's routine acquisitions, the following items were purchased:

- 3 bicycles
- microscopes
- a boat
- a solar energy system
- a water pumping system
- a photovoltaic system for refrigeration, lighting and radio communication
- a scythe

In spite of all the difficulties encountered, in general it has been a matter of consensus that CCPY's activities have been among the best organized and most effective, whether from the point of view of the teams' performance in the field or of the quality of the production, recording and processing of information.

However, some important problems should be highlighted, for example in the case of the data on the vaccinations carried out during this period (variation in the criteria used for defining the age brackets of the target population). The process of writing up field trip reports continues to be relatively slow, mainly due to the difficulties in organizing the information gathered in the field; in the more densely-populated areas, where many villages receive health care simultaneously over a short period of time, the use of individual record sheets becomes practically impossible. The recording of indentification, diagnoses and procedures ends up being carried out in inadequate field notebooks, which although easier to use, obviously allow the recording of the information in a much less well-ordered manner.

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2. Scope and Coverage of Actions

Since there is as yet no available and/or reliable data on the actions undertaken in the Yanomami territory as a whole during the relevant period, we deal here only with that which concerns CCPY's participation (Appendix 2).

As malaria is the most important health problem for the Yanomami today, and since there is still a great range of differences in techniques for recording the data for other diseases, we have decided to use it as our parameter in evaluating the general health conditions of the populations receiving health care.

Aside from the health care activities quantified in Appendix 5, it should be pointed out that over the period of January 1990 to June 1991, the Demini community was covered by two successive basic vaccination operations (Diptheria, Polio, Measles, BCG, Tetanus) for the susceptible populations (field trips from 27 April to 4 May 1990 and from 2-9 November 1990). With the posting in the area of a full-time health worker, who will be responsible for extending the vaccination of the target population (easily achieved once the vaccine storage refrigeration system has been installed on-site), one can take it for granted that the figures for vaccination coverage in this village will easily reach the 100% mark.

Toototobi was also covered by two vaccination operations under the responsibility of the Demini Project team (trips undertaken from 5 to 20 May and from 10 November to 7 December 1990). Since this is an area which includes a large number of villages (many of them remote and little-known), we do not include here the data on their vaccination coverage, which we consider to be as yet only provisional.

The vaccine coverage level of Aracá also reflects two vaccination trips undertaken during this period (from 20 to 31 May and from 8 to 18 December 1990).

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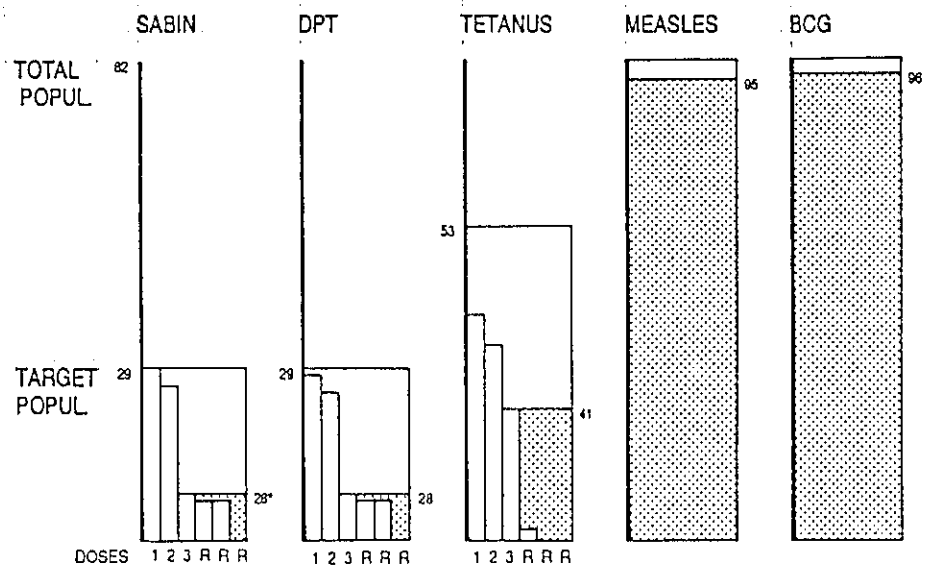
VACCINATION TABLE
NOVEMBER 1990

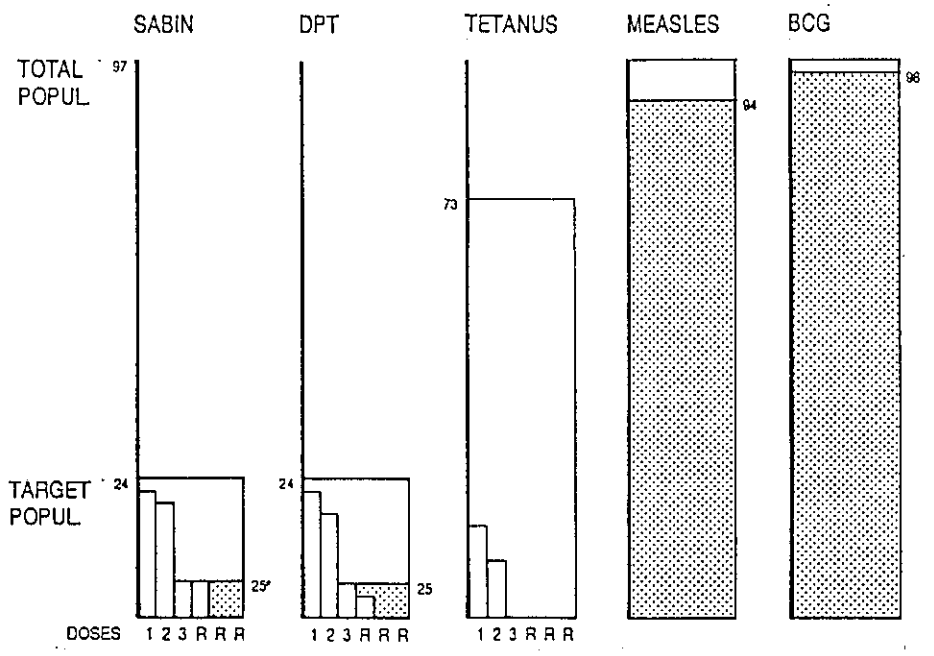
DEMINI



* Vaccinated Population in %

Observation: As can be observed from the table above, especial attention should be paid to the Sabin, DPT and Tetanus coverage.

ARACÁ



* Vaccinated Population in %

Observation: The vaccination carried out by the missionaries in August 1990 (4 doses of Sabin, 4 doses of DPT, one dose of Tetanus and one dose of Measles) was not taken into account. They observed that there may have been a breakdown in the refrigeration system.

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VI

THE HEALTH OF THE YANOMAMI: A DISCUSSION

1. Determining Factors

The fact that *garimpeiro* activity represents the most immediate and drastic biological, social, cultural and ecological problem imposed on the Yanomami makes it, as a matter of principle, the top priority in any action which aims at providing them with health care. The presence of *garimpeiros* has not only led directly to the mortality which has resulted from violent conflicts, the introduction and spread of malaria, the disappearance of game and fish - which in turn leads immediately to malnutrition and thus to the spread of sickness - but it has also directly determined the movements, the occupation and the redefinition of space by the Yanomami communities[1].

At times this movement takes the form of flight from areas affected by epidemics and probable armed conflicts with the *garimpeiros*, and other times of moving closer to the airstrips and mining encampments, often in an attempt to create more permanent and effective alliances with the *garimpeiros* in order to supplement the Yanomami's lack of food and medicines (when it is no longer viable to move to a better area).[2]

This approximation occurs, in large measure, as part of a process strategically encouraged by those who control the *garimpeiro* activity as a means to claim legitimacy for the *garimpeiros'* presence in the area. Faced with the perspective of a total lack of health care, the Indians themselves come to demand this presence (as in the case of Xidea, location of Lauro's airstrip).

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[1] A fact clearly observed, for example, in the activities of aerial survey of huts and in the health care visits which took place in the jurisdicton area of the Surucucus Funai post between January and June 1990. In at least 14 of the villages located and/or visited, huts had been abandoned and many had been burned down. The Yanomani have moved to temporary huts in the forest, mainly as a result of the great number of deaths caused by malaria (source: Funai/1990). In many cases, this rushed flight explains the change in Yanomani housing, which starts to incorporate blue plastic sheeting left by the *garimpeiros* (along with malaria, viral infections, skin and respiratory infections, sexually transmitted diseases and the presents of underwear and shorts given as gifts, for example, by Lauro, a tin-mining businessman who controls one of the region's biggest airstrips), accentuating the precariousness of the improvised *xabonos* (huts).

[2] As is the case with the huts around Lauro's and Jeremias's airstrips, among others, or of the undeniable attraction which the health posts exert, for example, in Paapiú, Surucucus and during the occupation of Jeremias's airstrip by the Funai-SUCAM team.

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The absence of any game, with the animals being driven away by the noise of the machines, and of fish due to the disturbance and pollution of the rivers, together with the abandoning of the cultivation of plots of land, closes the circle of social deterioration which aggravates the Yanomami's dependence on the *garimpeiros* for food supplies[3], bringing about their serious state of malnutrition. Besides this, in these conditions where communities abandon semi-nomadism to settle in a fixed location, there is in general the rapid arrival of malaria, alcoholism and prostitution (exchange of food for sexual favours) and consequently the spread of sexually transmitted diseases.

However, it is not possible to neglect the significance of the *garimpeiros'* own situation as a social and health question; a sad and shocking image of a conception of progress which ignores its human cost. It is a fact that to the slaughter of the Yanomami must be added the stories of thousands of men who have lost their roots, their families, friends, their loved ones, their projects and, for an unknown number of them, their lives. For the vast majority of these men, to work as a *garimpeiro* is an option which brings the objective denial of these things because there is no way back from it: new labour is always welcomed and even initially financed by the "*garimpeiro* businessmen", but the worker's ability to leave depends exclusively on his luck in finding gold and on being able to survive. The men from Maranhão, Ceará, Minas Gerais and Alagoas who today still launch themselves into this veritable slaughterhouse already carry with them a past of social marginalisation and a total lack of perspectives.

Garimpeiro activity is the fundamental determining factor in the Yanomami's calamity since it represents a calamity in itself. And if any of the possible solutions for the health problems of the Yanomami presupposes, first of all, the removal of invaders and the immediate recovery of the damage caused to their lands, it also presupposes and requires that decent conditions and solid perspectives for life be created for the *garimpeiros* themselves. Such a solution must be supported by a far-reaching social policy, by a policy for Amazonia which identifies, recognises and guarantees the geographical, economic, social and cultural diversity of this space and its inhabitants.

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[3] While working on the Yanomani Health Enquiry, the team involved visited Lauro's airstrip on 22 August 1990. When notified by the Federal Police of the imminent definitive expulsion of the *garimpeiros* from the area, the Yanomani who had gathered there demonstrated even more signs of concern as to their fate, since they were extremely sceptical about the possibility of receiving any kind of care from Funai. With the presence of the *garimpeiros* they would at least be receiving food (consisting almost exclusively of carbohydrates - biscuits, rice, manioc flour), medicines... underwear and shorts. In fact, today, Lauro's airstrip is the main centre attracting Yanomani migration towards the Surucucus Funai post in the Xidea Hill region.

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2. Current Situation

Given to the general picture of low levels of coverage and deficiencies and discontinuities in the actions carried out in this period, it can be said that the Yanomami's health situation as a whole has remained practically unchanged in relation to that existing at the start of the PEASY in 1990.

If the average rates of malaria-induced morbidity (adopted here as our preferred indicator since it is currently the most important threat to the Yanomami's health) recorded during the PEASY was around 20%, with considerable variations between villages and in some cases a rate which reached 91%, today the situation has not changed much.

For example, the Tootobi region, which was visited by a health team in May 1990, (as part of the continuation of the emergency plan) recorded an average figure of 19.51% for malaria-induced morbidity (with figures for each village of the region varying, as they had before) in November/December 1990, on the occasion of the Demini Project health team's first visit.

Much more serious malaria-induced morbidity situations will undoubtedly be recorded in the regions which have not received health teams' visits since that period:

- In January 1991, one year after the PEASY started, the figure for the Homoxi community (located in the Surucucus region, highly exposed to *garimpeiro* activity) was still of 50.76%. FUNASA's preliminary figures, established on 25 May 1991, suggest that the current morbidity rate is already closer to 20% (17.04%).
- In January 1990, (during the period of the PEASY) the average morbidity rate of the four villages of Paapiú (Surucucus region) was around 62%; FUNASA's preliminary figures, established on 27 May 1991, after the post had been abandoned by Funai for a long period (from 13 December 1990 to 11 May 1991, when the PSY's health team arrived) suggest a present malaria-induced morbidity rate of around 40%. Despite the actions of *Operação Selva Livre*, intense movement of aeroplanes and *garimpeiro* activities around the post are once again being registered.
- In April 1991, around 160 Yanomami, most of them from the Karimani community, sought treatment for malaria in the Auaris mission (which means that at least 40% of the estimated population in the region is affected by the disease). Even though it is relatively distant from *garimpeiro* activities, Karimani, like Tootobi, is located in a region of frequent migrations of groups coming from other areas. In these cases, the transmission of malaria basically takes place through the Yanomami's visits to each other and to the areas of *garimpeiro* activity.
- On the other hand, in the Demini community - since it has also been relatively well-preserved from the *garimpeiros'* activities and since it has been sistematically covered by the work of the health teams of its own project since January 1990 - the situation has been reversed since January in spite of inter-group visiting: the figures show a fall from 15% in November 1990 to 2.42% in February 1991, with a steady rate of around 3% since then (some two cases of Yanomami affected by and treated for malaria per month out of the total population).

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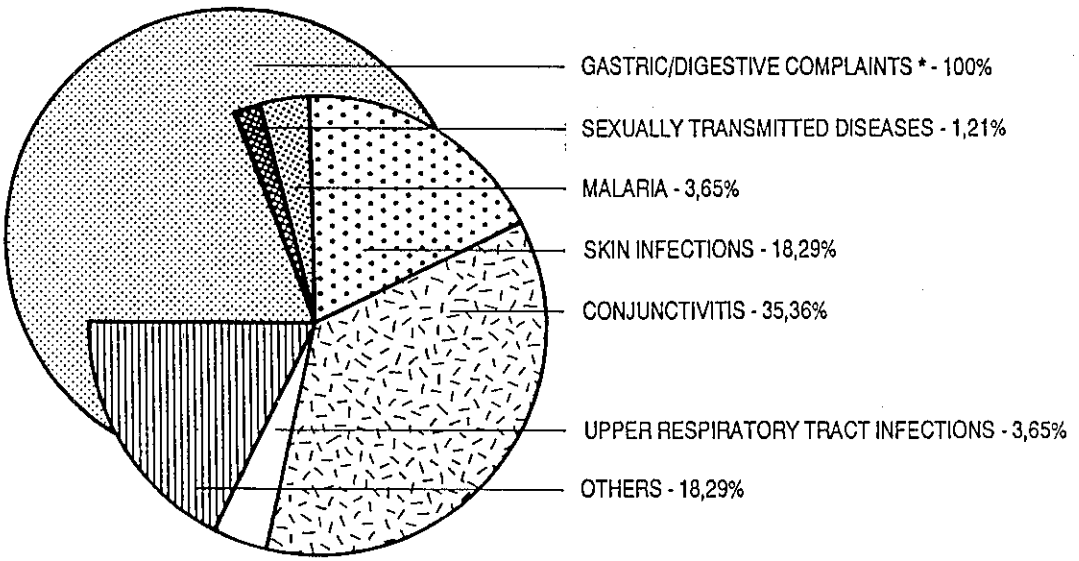
WATORIKTHERI (DEMINI POST)
MORBIDITY
25 April to 31 May 1991



* During this period, the entire population received some form of treatment for gastric/digestive complaints (ranging from gastroenteritis to intestinal parasites), including a total of 75 treatments for worm infestations

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VII

CONTINUATION OF THE WORK: PROPOSALS

Experience shows that the consolidation and expansion of the work of the PSY must continue to be the object of attention and of pressure exerted on the Brazilian government, at least as long as the Programme does not have administrative and financial autonomy and while the means of guaranteeing direct non-governmental participation in evaluation, both of the actions carried out and of the application of the allocated resources, are not consolidated.

Experience also shows that, at least while the above conditions remain unfulfilled, it would be unwise for CCPY to suppose that it can limit its efforts exclusively to the areas for which it initially took responsibility at the "Manaus Workshop" which defined the outline of the PSY.

In other words, CCPY should not yet omit to foresee in its budget a future possible need to intervene in other areas besides the so called "Area 15", since this would run the risk of overlooking situations which are in almost all cases catastrophic for the Yanomami.

With reference to the work in "Area 15", the following aims were established for the current period:

1. To maintain the schedule of regular visits to the Demini community by a complete health team (doctor, nurse, laboratory technician).
2. To maintain at least one full time health worker in Demini (there have been two earmarked for "Area 15" since March).
3. To improve and increase the infrastructure in Demini by:
   - The construction of the Project's own dispensary, with enough space for a small infirmary, a basic laboratory for the diagnosis of malaria, two bathrooms with running water, a room for the health personnel and another to accomodate the relatives of patients who require a more complex treatement or are waiting to be airlifted out.
   - The installation of a complete basic laboratory for the diagnosis of malaria.
   - The installation of a vaccine storage cooling box (already carried out).
4. To develop a plan for "health education" activities for the Demini community (see proposals presented in the "Report on Activites - November/December 1990").
5. To consolidate and expand of the activites in the Tootobi area by:
   - Maintaining the schedule of regular (bi-monthly) trips by complete health teams.
   - Purchasing a boat and two outboard motors (one reserve motor, necessary given the unpredictability of airborne supplies and/or maintenance) to transport the health teams in the region (boat and one motor already purchased).

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- Carrying out an intitial survey of the situation of some villages (so far completely unknown) located at the headwaters of the rivers Balaú and Taraú (Upper Demini).
- Planning, priority definition and scheduling of work in the Upper Demini.
- Planning of initial programme of "health education" activities (see preliminary proposal in the "Report on Activities - November/December 1990").

6. To consolidate and expand the work begun in the Aracá region (defining and putting into effect a schedule of regular health team visits to the area).

7. To define initial strategies and plan the programme of work to be carried out in the Ajuricaba region.

- To suggest that the Yanomami take the initiative of building an airstrip in the area, which is extremely difficult to reach by river, and provide support (including food for those working on it) for this initiative.

8. To put into practice the use of a simplified medical registration form, making easier both the collection of data in the field and their transference to the general registry file (data base) in Boa Vista.

9. To computerise CCPY's data base, thus keeping the information coming from the field contantly up to date and organized. To this end, we propose the acquisition of two microcomputers (one already purchased), which would be linked by modem so that the transmission of data from the "generating centre" (CCPY in Boa Vista, responsible for collecting and transmitting information as soon as it is brought in from the field by the teams) could be instantaneous. The hiring of a person to be responsible for the permanent operation of this database, as well as the organization and constant administration of the CCPY's "storehouse" of medicines and equipment in Boa Vista, is also necessary.

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DENTAL HEALTH

AREA 15 (DEMINI PROJECT)

JANUARY TO DECEMBER 1990

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A year after the start of the Demini Project, the time is right for an evaluation of what the field work consisted of, with the intention of increasing this project's effectiveness among the Yanomami and with the teams permanently in the field.

In the case of the specific subject dealt with here - dental health - the area covered by the Project (Demini, Catrimani, Ajuricaba, Toototobi and Aracá) includes a range of different situations which require re-evaluation in order to improve the work's effectiveness.

The Project's activities began in January 1990, in the Demini region. Between 1987 and 1990, the Yanomami area had not received any preventive or curative dental care.

When Davi Kopenawa, Yanomami leader of the Demini community, conceived the project he was aware of the importance of preventive dental work and the possibility of this being carried out in the field, since this type of care had been provided by CCPY between 1985 and 1987 (under the agreement between CCPY and Funai).

The health situation of the Yanomami in 1990 is very different from that in 1987. The explosion of malaria throughout the whole area, due to the invasion of Yanomami territory by *garimpeiros* , also had an impact on dental health.

In Demini alone, the Watoriktheri community have suffered an increase of 50% in the number of caries in just three years.

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VIII

HEALTH CARE PLANNING

On the first trips to the Demini Project area the rate of teeth suffering from caries, the CLF (Caried, Lost, Filled) rate, was surveyed. In general, 90% of the population was covered. It was only in the Tootobi region that this survey did not cover all the villages, due to the size of the region. The group living close to the Mission (Antônio's community) and that living two hours' walk away (Plínio's community) were surveyed.

The large numbers of caried teeth which had to be extracted from members of the younger age groups led the health care planning to give give priority to the children and adolescents, with the objective that these adolescents should still have healthy dentition and a minimum of teeth lost in five years' time, when they would have reached adulthood.

Though the CLF rate represents an average, it is possible to compare the figures for the various areas and perceive the differences in their dental health situation (see pages 33 and 34). This survey should be repeated next year, when it will be possible to obtain a vision of the tooth decay situation after the start of the project. For the Demini region alone it is possible to compare data from 1987 and 1990, since a survey was carried out there in 1987 as part of CCPY's earlier work. For the regions of Tootobi, Aracá and Catrimani this survey was carried out for the first time during the 1990 field trips.

The areas covered by the planning were the following:

1. Preventive Care with Fluoride

This care was to be carried out systematically by the health team permanently in the area, under the supervision of the dentist. The initial objective was to train a nursing auxiliary resident in the area to apply fluoride gel. This would be applied twice a tear to members of the 2-14 year old age group. Fluoride mouthwash (with 0.2% sodium fluoride) would be carrried out fortnightly among members of the 6-14 year old age group.

The medium-term objective was that one Yanomami would be responsible for preventive care in each community.

2. Early Tooth Decay Treatment

On each of the dentist's visits, depending on the time available, complete treament of children in the 6-14 year old age group was to be carried out, with priority given to permanent dentition. In time, maintenance and initial care would be applied to the younger ones (incremental system).

3. Emergency Treatment of Adults

The main source of complaint was to be treated, by either filling or extraction.

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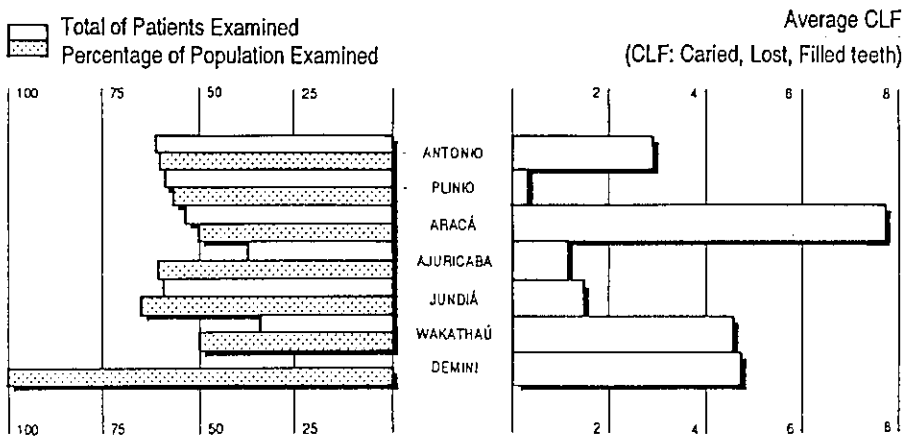
IX

COMPARATIVE AVERAGE CLF RATE FIGURES

1. TOOTOTOBI, ARACÁ, AJURICABA, JUNDIÁ, WAKATHAÚ AND DEMINI COMMUNITIES

TOTAL OF PATIENTS EXAMINED - AVERAGE CLF 1990



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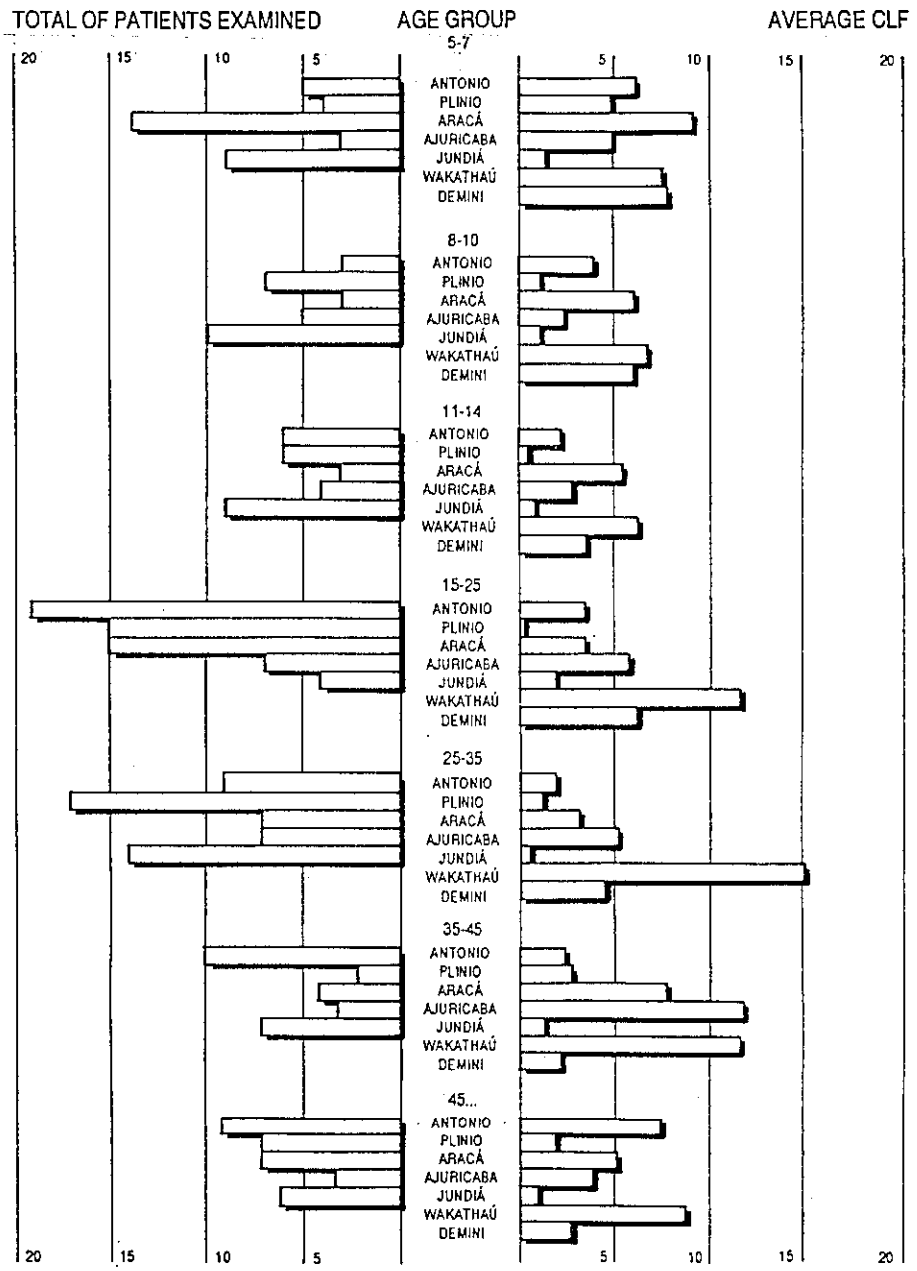
2. TOOTOTOBI, ARACÁ, AJURICABA, JUNDIÁ, WAKATHAÚ AND DEMINI COMMUNITIES

TOTAL OF PATIENTS EXAMINED - AVERAGE CLF BY AGE GROUP 1990



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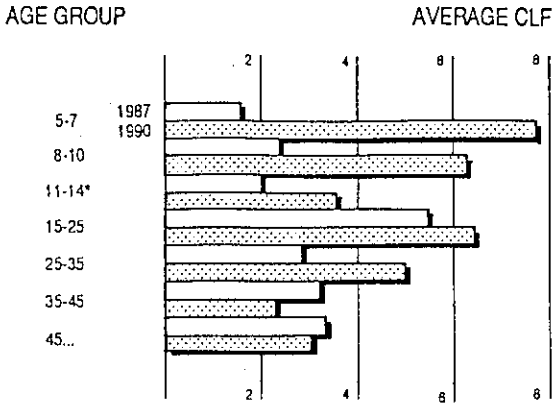
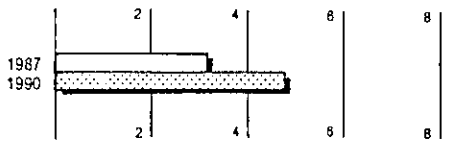
3. WATORIKÉ COMMUNITY - DEMINI POST AVERAGE CLF BY AGE GROUP 1987/1990



* In 1987 there were no individuals in the 11-14 year old age group as a result of the measles epidemic.



Total of patients examined: 100% of the population.

As can be observed from the figures obtained, the highest tooth decay rates were found among the Yanomami of Aracá and Demini and those living near the Catrimani Mission. The dental health situation of the Yanomami of Jundiá (Catrimani) and Plínio (Toototobi) was excellent. Both groups live far away from the Missions. The situation was fair in Antônio's community, living next to the Mission in Toototobi.

Attention should be drawn as a matter of urgency to the extremely high levels of milk tooth deterioration. Even among the Toototobi communities the rate of decaying milk teeth is high. Throughout the area of the Project it is common to find two- or three-year-old children with their teeth completely destroyed. Aside from the well-known theories accounting for increases in tooth decay (diet, hypermedication, decline in general level of health) it would be important to carry out research into the reasons for this reaction in the milk teeth to the arrival of damaging agents.

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X

FIELD WORK

The priorities for field trips were established according to the results of the tooth decay rates. The question of integration between the dentist and the personnel resident in the area also proved to be a factor which affected the achievement of objectives. The two must operate in harmony if preventive and curative care is to be successful.

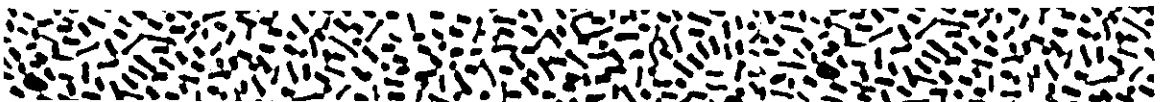
This harmony did not exist in the area controlled by the New Tribes Mission, which seriously handicapped the chances of success of any proposal to work there on a continuous basis. The missionaries of Tootobi and Aracá not only take no interest in carrying out preventive care with fluoride, but also pay Yanomami children with sweets and chewing gum for performing tasks for them. Though the Yanomami showed considerable interest in the work, the missionaries live permanently in the area while the health team only visits it, even though the visits are regular ones; it is very diffficult for the Yanomami to put into effect different health proposals when missionaries are destroying the validity of this work on a daily basis.

The emphasis of the work for these areas thus requires rethinking. In Demini, however, considerable progress was made in 1990. The perspectives for preventive care improved still further in early 1991, with the presence of the Demini Project's auxiliary nurse. The Funai post's auxiliary nurse showed no interest in carrying out preventive care. During the Dental Health Programme field trip of November 1990 Raimundo Yanomami showed interest in learning about the work and was taught how to apply fluoride gel, which he managed successfully. The auxiliary nurse's supervision is important, as this is work which must be carried out systematically and continuously.

It has not been easy to carry out restorative work in the 6-14 year old age group. The high intitial level of demand, from both adults and children, was due to their seeking a short-term solution to problems. After this initial moment, the second phase - that is, restorative work on teeth not causing painful symptoms - became difficult. Children did not turn up, and their parents merely smiled when they were called; it was necessary to go after them.

The level of integration between the dentist and the field team in the Catholic Mission of Catrimani has proved good. During the field trip carried out in June 1990 a meeting was held at which the Project's health care planning topics were set out and the need for field personnel to provide effective support in the area of dental health was expressed. Since then preventive care has been systematically carried out by the Mission's nurse.

Restorative care has also received a good level of cooperation from these missionaries. We managed to apply complete treatment to a good number of the children of Wakathautheri and Rotiptheri. Treatment of the children of Opiktheri was already under way on the most recent trip. In November 1990 three Yanomami, supervised by the nurse, were left in charge of applying fluoride to the Jundiá and Opiktheri communities.



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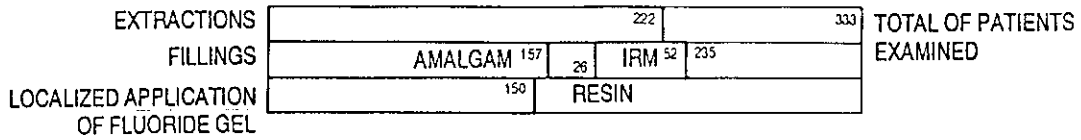
DEMINI, CATRIMANI, ARACÁ AND TOOTOTOBI COMMUNITIES
TOTAL OF CLINICAL CONSULTATIONS
1990



XI

CONCLUSIONS

The results of the Dental Health Programme can be considered positive after this first year of the Project. The dental care has been given objectives and priorities which have been kept to, despite the inherent difficulties of the field work.

A greater sharing of responsibilites for preventive care is to be hoped for, since this is important preservational work which should be carried out on a sytematic basis by everyone living among the Yanomami.

Above all, it is important to give encouragement to the Yanomami who are interested in carrying out this work.

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A SPECIFIC EXAMPLE:

PAULINO'S COMMUNITY

SEE MAP ON PAGE 15

XII

GARIMPEIRO ACTIVITY AND MALARIA IN THE UPPER TOOTOTOBI REGION (AMAZONAS STATE): THE YANOMAMI POINT OF VIEW

Statement made by Paulino Yanomami on 19 April 1991

Recorded and Translated by Bruce Albert

*I am very worried about the garimpeiros (*karipiribé*); for this reason you must speak out* [to the authorities]. *If my son dies I will really get angry*[4], *so you really must speak out! When you speak out, then I will be happy. I want to be happy, but I am very worried. You whites, your chiefs, the Funai people, all of you must speak out, and quickly! You have to make the garimpeiros go away quickly, because here they are spreading a terrible* xawara *(epidemic). The garimpeiros are very bad. I am troubled. Where there are no garimpeiros, there is no* xawara. *They are very bad. We are not dying yet, but we are always ill*[5]. *I am reflecting a lot on what is happening here and I have become very worried.*

*You must speak out so that they send the garimpeiros away: recall them, and quickly! When you do this, I will be happy. I am also worried about the things that they give as presents (*matihibë*). I tell the other Yanomami not to accept them. I, more than the others, dislike the garimpeiros because the river* [R. Tootobi], *this river whose waters go to Manaus, has been dirtied*[6]. *I am troubled; tell them this. You must speak out, the missionaries (*mirikanobë*) must speak out too, all of you must speak out; that's how I see it, and I'm losing my patience with all this. You are the true whites*[7]. *You must make the garimpeiros go away. That's how I see it. Take them away quickly before we die. You must speak out quickly! I am very worried.*

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4 *The ten-year-old boy was suffering, during our visit in April, from two crosses of Vivax-type malaria and acute splenomegaly and was seriously anaemic. Another of Paulino's sons, an adolescent, had also been suffering for months from recurrent bouts of malaria (and in April 1991 a cross of Vivax).*

5 *We observed that 43.2% of the members of Paulino's community were suffering from Vivax-type malaria.*

6 *The River Tootobi flows into the Demini, which is a tributary of the Lower Rio Negro, which flows into the Amazon near Manaus.*

7 *The "friendly" whites are identified with the white men who were created from indigenous stock, according to Yanomami mythology (the myth of* Remori*); the garimpeiros, or at least many aspects of their behaviour (violence, working in the mud), are frequently associated with the evil spirits (*yai thëbë*).*

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Our children are sick the whole time. Make the garimpeiros flee, quickly! They are very bad. I don't think they can be white men (see note 7 *), I am truly troubled by them. They are causing our deaths. I want to protect this forest, I don't want them working with gold here. I have been living here for a long time and I don't want them to destroy this forest: they are destroying old gardens where I used to live* [in the Upper Toototobi area]. *I am angry, I am losing my patience. You must speak out quickly. All of you have to speak out. I am worried; you must recall the garimpeiros before my son dies, before our children die. Your chiefs must speak out, really speak out. Then I will be happy: "Very good!" is what I'll be thinking. That's what I say. I want to protect this river that flows as far as Manaus, but the garimpeiros don't listen to what I say. They don't pay the slightest attention.*

"Here there are no chiefs, you are speaking out alone, we won't stop working, others told us to come to this place, we will continue working here!" That is what they say. I am worried. You must send them away quickly, you and Funai, you must speak out together.

When you come to see us with medicines I am happy. When the children get well I am very happy, so you must continue to come, you should not stop coming here as long as we're alive. Many of us have already died in the past [in an epidemic[8]], *other whites behaved evilly towards them. All our elders have already died in this way. I don't want to die as they did, from* xawara, *I don't want this disease, malaria, I really don't want it! You must speak out quickly, I am very troubled. (...)*

I no longer live at peace, I am always worried. I did not summon the garimpeiros to come here. I don't like them, I really don't, because they worry me. The river has become very dirty. You must send them away quickly. I like to eat fish, but the fish too are sick. Many big fish have already died. The electric eels have died. The Big Fish [possibly refers to the *pirarucu*] *have also died. The fish that are left are very bad to eat, their flesh is full of blood. It must be the* xawara *that does this. We too are unable to recover from this malaria. We all fall ill and where there are no medicines other Yanomami are close to death. I am very worried. (...) Recall the garimpeiros quickly. They do many terrible things here. They destroy our forest, which leaves me very worried. (...)*

The garimpeiros are increasing in numbers again, and I am worried and impatient with this situation. They are very bad, that's what I think. They also ask for our children, which is terrible. "I'm not going to give you my children!" is what I think to myself. I have already visited the place where the garimpeiros are working and they told me lies: "I'm going to give you shotgun shells and so I'll be able to carry on working with gold here!". This was the lie they told me. But they gave nothing, neither shotgun nor shells. "You are destroying my forest and don't even show me any generosity," I said to them. But they only replied "Later, later!". But when my people are dying I don't want their presents. They're all contaminated with xawara, *with malaria. The numbers of mosquitoes are also increasing greatly, which is very bad. I am worried. At the moment the numbers of garimpeiros are once more increasing. You really must speak out, speak out firmly for them to be recalled. You must speak to all their chiefs, without lying. There was a time when there were slightly fewer of them but now their numbers are increasing again. I want to be happy. Before we die, recall the garimpeiros. This is what I think. (...)*

---

8 *Most of the population of Toototobi was struck down by an epidemic (measles?) in the late 1950s.*

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When you give us medicines we get well, but later we will get ill again, because the garimpeiros think thus: "Later we will wipe out the Yanomami and then we'll be able to work with gold in their empty huts!". For this reason I am extremely worried. You must speak out quickly, and Funai must too, your chiefs must make speeches (hereamu *) to recall the garimpeiros. You should stop their planes taking off so that their numbers do not increase here. You should not give them food. If you don't let them bring food they will be afraid of hunger and will stop coming. This is what I think. When they are allowed to bring food the garimpeiros work, when their stomachs are full they take out a lot of gold.*

They are starting once again to take gold out of the same place: "We are going to work here again. When we get back together and our chief returns, when this manioc has grown[9]*, we will be back to work here!". This was what they said. I too spoke out: "Stop coming here! Let the river become clean again!" But they paid no attention to me and answered: "The chiefs do not say that, you are speaking out alone, for this reasson we're not going to obey you!" For this reason I am worried, very worried. I no longer manage to sleep properly, not at all. So, make these garimpeiros go away quickly. You all must say this, right now. When the Police*[10]*(* borusia *) arrive you must speak to them too. Then, I will think to myself "Yes, that's it!". And I will be happy.*

When I am happy, then I will be able to work in my vegetable garden as I wish. When one is ill one doesn't want to work, one suffers when working in this condition. As long as the garimpeiros are seeking to destroy us, I don't want to work. I am angry. When they disappear, then I will be happy and will work properly.

I almost went to shoot the garimpeiros with arrows, but I have no shotgun. I thought of going, just out of rage. But I am afraid of the things that they have with which they can burn us all[11]*! I am a Yanomami, I don't have such terrible weapons as they do. I have nothing to make them die too. I am worried, very worried. Recall them quickly! They are only afraid of the Police* [see note 10]*. Once I said to them " the Police will burn your shacks!". You must speak out, speak to the Police, all of you, with your chiefs. Frighten the garimpeiros, that's the only way that they'll disappear from here.*

There, in the highlands[12]*, the garimpeiros have already killed Yanomami with gunshots. They are very bad. If they have already killed Yanomami in this way, I think that maybe they could do the same thing with us; they could come and attack us. If you speak out quickly, I will be happy. Now I am thinking things through properly and for this reason I am speaking out. (...)*

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9 *Apparently the garimpeiros have even planted vegetable gardens to guarantee sustaining themselves in the area.*

10 *The Federal Police responsible for removing the garimpeiros (*"Operação Selva Livre *")*

11 *Afraid of the explosives which the Yanomami think could be dropped on their huts from planes in retaliation.*

12 *The region of the Upper Orinoco, Parima and Mucajaí (Roraima State) - an allusion to the massacre in Paapiú in August 1987 and to other crimes carried out by the garimpeiros since then, the most recent of which was in March 1991 (Xiriana airstrip); see report in the newspaper* O Estado de São Paulo, *22/3/91.*

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Yes, I want to be happy and I don't want my son to die. He has almost died already, he is constantly ill. I am very troubled. In other lands there is no xawara [epidemic]. *You don't bring* xawara *and I am truly happy in giving you food because I consider you to be friends. When it is time for the bananas to ripen I will give you some to eat, because you want to protect us. Thus we have good thoughts, and sleep well.*

Our old people have already died of xawara *and I don't want to die in this way now; I am alreay one of the few survivors of that time, there are no longer any elders among us. I want to die properly, that is the truth. I want to die of old age, growing very thin and dry, slowly. I really want to die of old age, I don't want to die in this way, while I am still strong. That's the way I think when I am worried. You should say this and when you do I will be happy and will think "Yes indeed! They really are our friends!" In fact, you really are friends, you are descendants of those Yanomami ancestors who became white men* [see note 7] *and it is perhaps for this reason that you want to protect us; that is what I think. For this reason I like you and I speak out about the garimpeiros, saying "Why have you not recalled them yet?".*

I have already spoken out once, but my words fell short [did not achieve their objective], *and for this reason I am speaking out again, just one more time. Were the Police lying* [when they said they would remove the garimpeiros] *? I wonder to myself, even though I like the Police, I really do. The garimpeiros are afraid of the Police. When the Police plane arrives they rush around, hide their weapons in the forest and flee in all directions; one even feels sorry for them when one sees this. You must frighten these garimpeiros quickly, that's the only way that I will be happy. When I'm happy I'll sleep well, work properly in my vegetable garden, I'll take pleasure in working. When the garimpeiros give us malaria I don't want to work, I only get angry. When the river has been dirtied I also get angry.*

Now I am back here for a while[13]*, but I won't stay if things carry on like this. I am moving; I'm going to clear a new garden on the banks of the* Paxotoú. *When you come to visit me in this new place, send the Police and come too to pierce our fingertips* [to obtain blood samples for microscope slides to check on possible malaria contamination]. *I will be happy, I will think "That's the way it should be, very good!" When our sick people get well, I am happy. All our elders have already died of* xawara *in the past, and I don't want to die that way too. I am deeply troubled by this. I think to myself: "How am I going to cure this malaria?"*

I also spoke to the missionary: "You have to speak out quickly!" And I also said "Let throw out the garimpeiros together!" But he answered: "They will kill us!" So I said: "Give me a shotgun and I will kill them too to avenge you!" But he didn't want to, no way. I, alone, am becoming angry. If, in the end, my son dies, maybe I will end up killing garimpeiros, on my own, and afterwards I will disappear into the dense jungle, because I don't want to be burned afterwards.

That's the way it is.

---

13 *After falling seriously ill in early December 1990, Paulino, who blamed his illness on the pollution of the river, abandoned his village and spent almost three months wandering through the forest with his community. He returned in April 1991 to meet up with us and get all the sick members of his community treated. He left shortly afterwards to clear a new vegetable garden on the banks of a tributary of the River Toototobi which had not yet been polluted (the River Cunha Vilar, or* Paxotoú *in Yanomami).*

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XIII

THE HEALTH SITUATION IN PAULINO'S COMMUNITY

April 1991

Deise Alves Francisco

Up to December of last year, the member's of Paulino's community lived near Plínio's group (in the area of the River Toototobi). However, due to the environmental degradation of the region they are currently living in the forest and clearing a new vegetable garden on the Lower River Cunha Vilar (*Paxotoú*), which they say is less polluted by *garimpeiro* activity than the River Toototobi.

They returned with great reluctance to Plínio's area to receive medical care. Messengers had to be sent several times before they agreed to come, which they finally did on April 17. Even so, almost half the group left the following day and the other half on April 19.

They are fully aware of the fact that the malaria epidemic in the region is caused by the presence of *garimpeiros* in the Upper Toototobi area. They are very angry about the pollution of the river and the land, which they believe to be full of *xawara* (epidemics), which have already caused several deaths in the village. They denounce the contamination of the fish, which they say are also sick due to the greater quantity of blood found in their flesh (mercury contamination?), and the destruction of the forest by the *garimpeiros*.

They registered the highest malaria contamination rate of all the villages examined: 43.2%. Compared with November 1990 the number of cases has doubled, probably due to the complete absence of treatment during the last four months. Contamination by the Vivax strain was more prevalent (93.7%) than Falciparum (6.3%), with varying levels of parasite concentration (from +/2 to ++). The cases of anaemia and splenomegaly rates encountered were also at a vey high level, affecting 45.9% and 75.6% of the population respectively. This was the community which registered the highest levels of malaria contamination in children under 10 years old (47% of cases).

They requested with considerable frequency that we talked to our chiefs (the appropriate authorities) so that the *garimpeiros* could be removed from the region with urgency. All of them were very upset and disturbed, and their leader stated that if further deaths occurred as a result of the presence of *garimpeiros* in the region they could end up seeking to avenge themselves.

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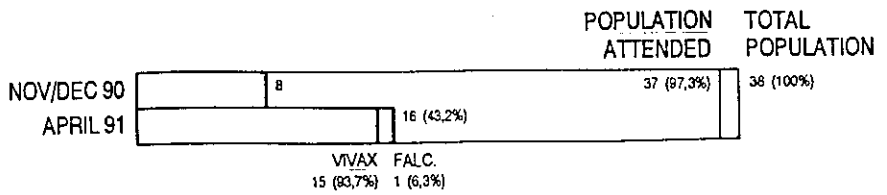
PAULINO'S COMMUNITY
MALARIA DATA - Nº OF CASES
1990 - 1991



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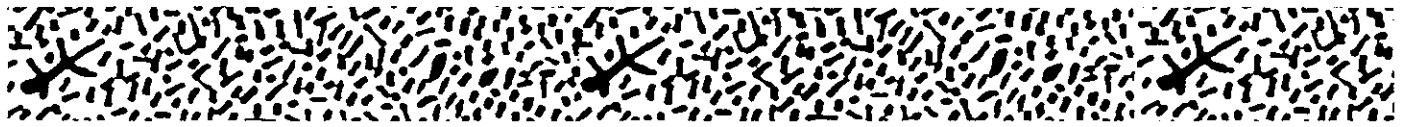
1 YANOMAMI HEALTH PROJECT - CCPY
SYNOPSIS OF ACTIVITIES - JANUARY 1990 / MAY 1991
HEALTH ASSISTANCE COVERAGE DURING WORK TRIP TO THE YANOMAMI AREA AND EPIDEMIOLOGICAL PROFILE OF THE POPULATION SEEN

REGION	PERIOD	VILLAGES VISITED
PAAPIÚ	17/01 - 15/02/90	Maharuu, Irobrerebe, Heroutheri, Wakahusibiu, Teberesikekeamobetheri
	14/06/ - 16/07/90	(Surroundings of FUNAI Post)
BAIXO MUCAJAÍ	15/04/ - 16/04/90	(Surroundings of FUNAI Post) 5 villages
ALTO MUCAJAÍ	17/04 - 27/04/90	(Surroundings of FUNAI Post) 6 villages
SURUCUCUS	19/01 - 29/01/90	Kanautheri, Koremutheri, Mansibiutheri, Xahonxitheri
	01/02 - 15/02/90	Xirimifiktheri, Homoxitheri
	02/02 - 13/02/90	Xirimifiktheri, Fufunabitheri, Fufunauatheri
	05/03 - 30/03/90	Xirimifik, Hakoma, Tisipora, Xideia, Bylisi, Xaronchi, Paapiú + (PIN)
	10/04 - 27/04/90	Xirimifik, Lokotheri, Tisiporatheri, Lokabu-U-Theri + (PIN)
	02/05 - 28/05/90	Botomata, Moxaf, Konkala, Loko, Xaronchi, Nabuta + (PIN)
ERICÓ-WAICÁS	01/02 - 09/02/90	Surubaí 1 e 2, Martins, Sabatoki, Campo Verde
	10/02 - 18/02/90	Estevão, André, Eduardo, Sebastião

Note: The data on dental care appears in a separate report; the data on vaccination and other treatments are part of the analysis and comments in the Report of Health Activities (Jan/90 to Mar/91)



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EST.POP.	SEEN POP.	COVERAGE RATE (%)	MALARIA (% IN REL. TO ESTIMATED POP.)			
			FALCIPARUM	VIVAX	MIXED	POSITIVES
246	225	91.46	42.68	10.91	9.34	67.46
55	55	100.00	21.81	3.63	5.45	30.89
65	51	78.46	-	3.07	-	3.07
230	165	71.73	5.65	12.17	-	17.82
204	201	98.52	2.94	8.33	-	11.27
192	192	100.00	1.56	1.04	-	2.60
321	127	39.56	?	?	?	6.23
748	135	18.04	1.33	2.00	-	3.33
320	200	62.50	-	0.93	-	0.93
380	150	39.47	1.31	13.15	-	14.46
254	117	46.06	1.18	0.78	-	1.96
52	49	94.23	7.69	9.61	-	17.30

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REGION	PERIOD	VILLAGES VISITED
DEMINI *	05/02 - 14/02/90	Watoriktheri
	04/04 - 27/04/90	Watoriktheri
	27/04 - 04/05/90 31/05 - 09/06/90	Watoriktheri
	02/11 - 09/11/90	Watoriktheri
	19/12/90-15/1/91 21/02 - 01/03/91	Watoriktheri
	25/04 - 31/05/91	Watoriktheri
TOOTOTOBI *	05/05 - 20/05/90	Antonio, Mateus, Roberto, Fialho, José, Alausikytheri, Warabiuthere
	10/11 - 07/12/90	Antonio, Fialho, José, Paulino, Plínio, Wanabiu/Eduardo, Wanabiu/Roberto, Warebiu, Paxotou, Ayaobe, Hwayasiketheri
	18/03 - 08/04/91	Antonio, Fialho, Wanabiu/Eduardo, Uxiximabiu, Plínio, Paulino, Warebiuthere
ARACÁ *	20/05 - 31/05/90	Surroundings of Mission Post
	02/12 - 18/12/90	Surroundings of Mission Post
	25/04 - 02/05/91	Hemupueitheri, Surroundings of Mission Post
CATRIMANI	15/01 - 26/01/91 11/02 - 21/02/91	Alto Catrimani, Médio Catrimani Rio Pacu e Cach. Piranteira
CASA DO ÍNDIO - BV	01/04 - 14/04/90 28/04 - 06/05/90	

* In the case of Area 15, the only "estimated" data are on the Toototobi (Ayaobe and Hwayasiketheri); the remainder are well known.

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EST.POP.	SEEN POP.	COVERAGE RATE (%)	MALARIA (% IN REL. TO ESTIMATED POP.)			
			FALCIPARUM	VIVAX	MIXED	POSITIVES
79	79	100.00	15.18	22.78	-	37.97
81	72	88.88	2.46	14.81	-	17.27
80	80	100.00	8.75	5.00	-	13.75
80	80	100.00	6.25	8.75	1.25	15.00
82	82	100.00	1.21	1.21	-	2.42
82	82	100.00	3.65	-	-	3.65
350	315	90.00	11.71	8.85	-	20.57
500	401	80.20	14.00	8.00	2.20	24.20
312	293	93.91	8.33	16.98	-	25.32
97	84	86.59	22.68	11.34	-	34.02
97	60	61.85	23.71	5.15	-	28.86
100	21	21.00	2.00	1.00	-	3.00
370	151	40.81	1.00	3.24	-	4.23

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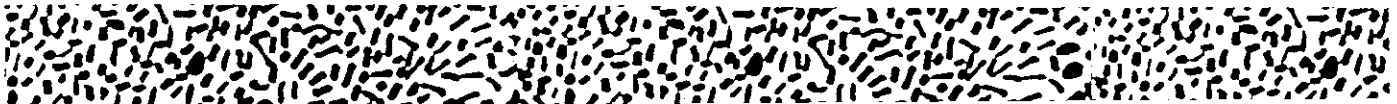
2 INTERINSTITUTIONAL RELATIONS AND FUNCTIONS OF THE PROJECT COMPONENTS

INSTITUTION	MANAGEMENT & ADMINISTRATION	HEALTH CARE	TECHNICAL SCIENTIFIC SUPPORT
FNS (*)	• National Coordination in articulation with Funai & other participating agencies • Administration of Regional Coordination and SLS management	• Local health care	• Technical advisory services
FNS/EEM	• Regional Coordination • Participation in Community Commission • Participation in Regional Coordination team	• Assignment of nurses (university & secondary levels)	• Technical advisory services in nursing
FNS/IEC	• Participation in Community Commission		• Information on epidemics and endemics behavior
FUNAI (*)	• Participation in National Coordination in articulation with FNS • Participation in Regional Coordination Team	• Integration in execution of activities • Referral System (Casa do Indio - B.Vista/RR)	• Permanent technical advisory services on Indian issues
SEMAN/IBAMA	• Participation in Community Commission		• Promotion and execution of recuperation actions for the more devastated mining areas

(*) Other coordination and management functions are defined in the Basic Administration Scheme

FNS: National Health Foundation
EEMM: Nursing School of Manaus
IEC: Evandro Chagas Institute
FUNAI: National Foundation for Indian Affairs
SEMAN: Environment Secretariat of the Presidence of the Republic
IBAMA: The Brazilian Institute for the Environment and Renewable Natural Resources



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	LOGISTICAL OPERATIONAL SUPPORT	STUDIES AND RESEARCH	HUMAN RESOURCES TRAINING
	• Technical & administrative support to Regional Coordination by the Amazonas and Roraima Regional Coordination offices • Air transportation	• Research financing • Epidemiological studies by CENEPI	• Through EEM and IEC
	• Support to Regional Coordination	• Studies in services planning organization • Serological surveys	• Coordination and execution of training courses
		• Serological surveys • Entomological surveys	• Training of laboratory personnel
	• Air transportation • Radio communication system • Interpreters	• Support in the identification of needs and proposal analysis • Access to technical-scientific collections	• Participation in deciding on training contents • Participation in training
	• Studies on alternative procedures that envisage environmental recuperation		

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INSTITUTION	MANAGEMENT & ADMINISTRATION	HEALTH CARE	TECHNICAL SCIENTIFIC SUPPORT
UFPa	• Participation in Community Commission	• Referral System (Barros Barreto Hospital)	• Setting up serum banks • Laboratory support • Setting up the information system
FUAM	• Participation in Community Commission • Participation in Regional Coordination Team		
UnB	• Participation in Community Commission		• Anthropological and linguistic support
PAHO	• Advisory in defining management model & in project definition • Participation in international cooperation negotiations	• Support of Expert Consultants	• Methodological support in the elaboration of the Project • Epidemiological support
SSRR	• Participation in Community Commission	• Assignment of personnel • Support to Surucucus infrastructure • Referral System	
CCPY	• Participation in Regional Coordination team (professional support)	• Local health care activities in Demini/CCPY (area 15)	• General information about the Yanomami territory • Technical advisory services for the elaboration of the Project and its operational detailing • Occasional Technical Assistance

UFPa: Federal University of Para
FUAM: University of Amazonas Foundation
UnB: University of Brasília Foundation
PAHO: Panamerican Health Organization
SSRR: Secretariat of Health of the State of Roraima
CCPY: Commission for the Creation of the Yanomami Park

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	LOGISTICAL OPERATIONAL SUPPORT	STUDIES AND RESEARCH	HUMAN RESOURCES TRAINING
		• Strategic studies on the integration of teaching and care components	• Participation in training
		• Monitoring technical interventions in anthropology population studies, epidemiology, and health services	• Participation in training
		• Census anthropological surveys	• Support for professional training courses - anthropological component
	• Imported input supply	• Support to health investigations on the Project	• Support in the definition of course content & teaching activities
	• Support from the Boa Vista Support Center • Medical drug and other supplies		• Participation in training
		• Financial support	• Participation in the definition of training course content

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INSTITUTION	MANAGEMENT & ADMINISTRATION	HEALTH CARE	TECHNICAL SCIENTIFIC SUPPORT
FIOCRUZ/UFRJ PROGRAM	• Participation in Community Commission	• Health activities in sub-area	• Setting up the demographic & health data bank • Establishing evaluation instruments, parameters & criteria
IMTM	• Participation in Community Commission	• Evaluation, follow up & clinical treatment of endemic disease & snake bite cases (Referral System)	
MAer/FAB	• Participation in Community Commission		
SSAM	• Participation in Community Commission	• Referral System • Test & health care in the area	
ABA			• Professional support in anthropology
RORAIMA/ DIOCESE	• Participation in Community Commission	• Health care in the area	
RELIGIOUS MISSIONS	• Participation in Community Commission	• Health care in the area	

FIOCRUZ: Oswaldo Cruz Foundation
UFRJ: Federal University of Rio de Janeiro
IMTM: Tropical Medicine Institute of Manaus/Amazonas
MAer: Ministry of Aeronautics
SSAM: Secretariat of Health of the State of Amazonas
ABA: Brazilian Anthropological Society

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LOGISTICAL OPERATIONAL SUPPORT	STUDIES AND RESEARCH	HUMAN RESOURCES TRAINING
	• Research project development	• Support for training courses
	• Diagnosis of the situation in the area	
• Air transportation to the area & within the Yanomami territory • Support in transportation communication logistical planning		
		• Participation in training
		• Support of anthropological content of training
• Lodging for personnel • Transportation in the area • Support to the Boa Vista Center		• Participation in training
• Support of interpreters • Lodging at missions • Specific air support		• Participation in training

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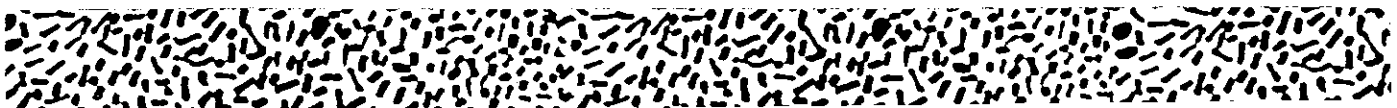
3 FIELD TRIP SCHEDULE APRIL 1990/MAY 1991

HEALTH PROFESSIONAL	FUNCTION	INTERPRETER
AREA 15 (DEMINI PROJECT) APRIL/DECEMBER 1990		
Maria Aparecida de Oliveira	Dentist	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Maria Gorete Selau	Doctor	Davi
Maria Gorete Selau	Doctor	Davi
Maria Gorete Selau	Doctor	Davi
Maria Gorete Selau	Doctor	Davi
Maria Gorete Selau	Doctor	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Maria Aparecida de Oliveira	Dentist	Davi
Istvan Varga	Doctor	Bruce Albert (2)
Istvan Varga	Doctor	Bruce Albert
Maria Aparecida de Oliveira	Dentist	Bruce Albert
Maria Aparecida de Oliveira	Dentist	Bruce Albert
Elizete D. César	Nurse	Bruce Albert
Luci Mara M. Montejane (3)	Nurse	Bruce Albert
Maria Gorete Selau	Doctor	Bruce Albert
Maria Gorete Selau	Doctor	Bruce Albert
CCPY Coordinator		
Cláudia Andujar	Cons. OXFAM	

(1) Ajuricaba is reached by river

(2) Bruce Albert, anthropologist, UnB/ORSTOM

(3) The nurse Luci Mara M. Montejane joined the permanent health team as of February 1991



Acervo ISA

	PERIOD	Nº OF DAYS	REGION	TRAINING	TOTAL FLIGHT TIME
	23/01 to 30/01	7	Demini	-	5h15min
	30/01 to 10/02	10	Catrimani	-	-
	05/02 to 14/02	9	Demini	-	Peasy
	27/04 to 04/05	7	Demini	-	-
	05/05 to 20/05	15	Toototobi	-	-
	20/05 to 31/05	11	Aracá	-	-
	31/05 to 09/06	9	Demini	-	-
	05/05 to 20/05	15	Toototobi	-	7h35min
	20/05 to 31/05	11	Aracá	-	-
	02/06 to 09/06	4	Ajuricaba (1)	-	-
	07/06 to 12/06	5	Demini	-	-
	14/06 to 23/06	9	Catrimani	-	-
	02/11 to 09/11	7	Demini	-	-
	10/11 to 07/12	27	Toototobi	-	-
	10/11 to 24/11	5	Demini	-	-
	24/11 to 07/12	13	Catrimani	-	14h35min
	10/11 to 07/12	9	Demini	-	-
	10/11 to 07/12	9	Demini	-	-
	08/12 to 18/12	11	Aracá	-	-
	19/12 to 31/12	12	Demini	-	5h15min
	31/10	1	Demini	-	2h50min
		198			34h55min

Acervo ISA

HEALTH PROFESSIONAL	FUNCTION	INTERPRETER
OTHER AREAS (OFFICIAL EMERGENCY PROJECT) JANUARY/FEBRUARY 1990		
Ivone Andreatta Menegola	Doctor	Bruce Albert
Maria Aparecida da Silva	Doctor	-
Danilo Ferreira Nunes	Doctor	-
Marise Oliveira Fonseca	Doctor	-
Marise Gorete Selau	Doctor	-
		Cláudia Andujar
		Carlo Zacquini
MARCH/DECEMBER 1990		
Maria Aparecida da Silva	Doctor	-
Maria Aparecida da Silva	Doctor	-
Maria Aparecida da Silva	Doctor	-
Maria Aparecida da Silva	Doctor	-
Maria Auxiliadora de Souza	Doctor	-
Deise Alves Francisco	Doctor	-
Istvan Varga	Doctor	-
AREA 15 (DEMINI PROJECT) JANUARY/MAY 1991		
Maria Gorete Selau	Doctor	Davi
Maria Gorete Selau	Doctor	Missionaries
Maria Gorete Selau	Doctor	Missionaries
Maria Gorete Selau	Doctor	Davi
Transportation Of Health Material		
Gale Gomez	Linguist	-
Bruce Albert	Anthropologist	-
Luci Mara M. Montejane	Nurse	-

(1) Istvan Varga, trip to survey the health situation for the Attorney General's office

Acervo ISA

	PERIOD	Nº OF DAYS	REGION	TRAINING	TOTAL FLIGHT TIME
	17/01 to 15/02	29	Paapiú	-	Peasy
	01/02 to 15/02	15	Surucucus	-	Peasy
	02/02 to 13/02	11	Surucucus	-	Peasy
	01/02 to 18/02	18	Ericó/Waicás	-	Peasy
	19/01 to 29/01	10	Surucucus	-	Peasy
	01/02 to 15/02	15	Paapiú	-	Peasy
	01/02 to 15/02	15	Surucucus	-	Peasy
		113			
	05/03 to 30/03	25	Surucucus	-	Peasy
	04/04 to 27/04	23	Demini/Surucucus	-	Peasy
	02/05 to 28/05	26	Surucucus	-	Peasy
	01/06 to 31/08	60	Surucucus	-	Peasy
	14/06 to 10/07	26	Paapiú	-	Peasy
	01/04 to 06/05	35	Paapiú	-	Peasy
	20/08 to 24/08	4	Surucucus/	-	-
		199	Paapiú (1)	-	-
	01/01 to 15/01	15	Demini	-	3h15min
	16/01 to 26/01	10	Catrimani	-	3h15min
	11/02 to 21/02	10	Catrimani	-	3h50min
	22/02 to 01/03	10	Demini	-	3h21min
	06/03		Demini	-	2h59min
	24/03 to 02/04		Demini	-	2h59min
	24/03 to 02/04		Demini	-	-
		13	São Paulo	04/02 to 17/02	-

Acervo ISA

HEALTH PROFESSIONAL	FUNCTION	INTERPRETER
Luci Mara M. Montejane	Nurse	-
Deise A. Francisco	Doctor	-
Deise A. Francisco	Doctor	-
Bruce Albert	Anthropologist	-
Gale Gomez	Linguist	-
José Luiz Silva	Nurse	-
José Luiz Silva	Nurse	-
José Luiz Silva	Nurse	-
Maria Aparecida de Oliveira	Dentist	-
Maria Aparecida de Oliveira	Dentist	-
Maria Aparecida de Oliveira	Dentist	-
Ricardo Verdum	Lab. Technician	-
Ricardo Verdum	Lab. Technician	-
Ricardo Verdum	Lab. Technician	-
OTHER AREAS (OFFICIAL PROJECT) JANUARY/MAY 1991		
Marcos Pellegrini	Doctor	-
Álvaro Braz	Doctor	-
Álvaro Braz	Doctor	-
Álvaro Braz	Doctor	-
Antonio Wander Nardelli	Doctor	-
Antonio Wander Nardelli	Doctor	-
Ivone Menegola	Doctor	-
Ivone Menegola	Doctor	-
Ivone Menegola	Doctor	-
Ivone Menegola	Doctor	-
Ivone Menegola	Doctor	Carlo Zacquini

(1) José Luiz da Silva is still in the Demini area
(2) Ricardo Verdum: training in Manaus under CCPY's responsibility
(3) Ricardo Verdum: training in Boa Vista under CCPY's responsibility
(4) Training in São Paulo under CCPY's responsibility
(5) Advisors to the Coordination in Boa Vista
(6) Antonio Wander Nardelli is still in the Surucucus area

Acervo ISA

	PERIOD	Nº OF DAYS	REGION	TRAINING	TOTAL FLIGHT TIME
	21/02 to 30/05	98	Demini	-	-
	02/04 to 03/04	1	Demini	-	11h35min
	04/04 to 25/04	21	Toototobi	-	-
	04/04 to 25/04	21	Toototobi	-	-
	04/04 to 05/04	1	Toototobi	-	4h
	02/04 to 03/04	1	Demini	-	-
	04/04 to 25/04	21	Toototobi	-	-
	26/04	35 (1)	Demini	-	-
	12/04 to 25/04	13	Catrimani	-	-
	26/04 to 02/05	6	Aracá	-	4h50min
	03/05 to 12/05	9	Demini	-	3h10min
		10	Manaus	11/04 to 21/04 (2)	-
	25/04 to 02/05	8	Aracá	-	-
		11	Boa Vista	03/05 to 14/05 (3)	-
		332		-	41h09min
	28/03 to 11/04	14	Surucucus	-	3h20min
		10	São Paulo	12/03 to 22/03 (4)	-
	25/03 to 27/03	2	Boa Vista (5)	-	-
	28/03 to 31/05	63	Surucucus (6)	-	-
	22/04 to 09/05	17	Boa Vista	-	-
	10/05	21	Surucucus	-	Paid by government
	26/02 to 08/03	10	Surucucus	-	-
	08/03 to 15/03	7	Olomai	-	-
	18/03 to 06/04	18	Auaris	-	Paid by government
	07/04 to 30/04	23	Boa Vista (5)	-	-
	12/05 to 15/05	3	Paapiú	-	-
		188			3h20min