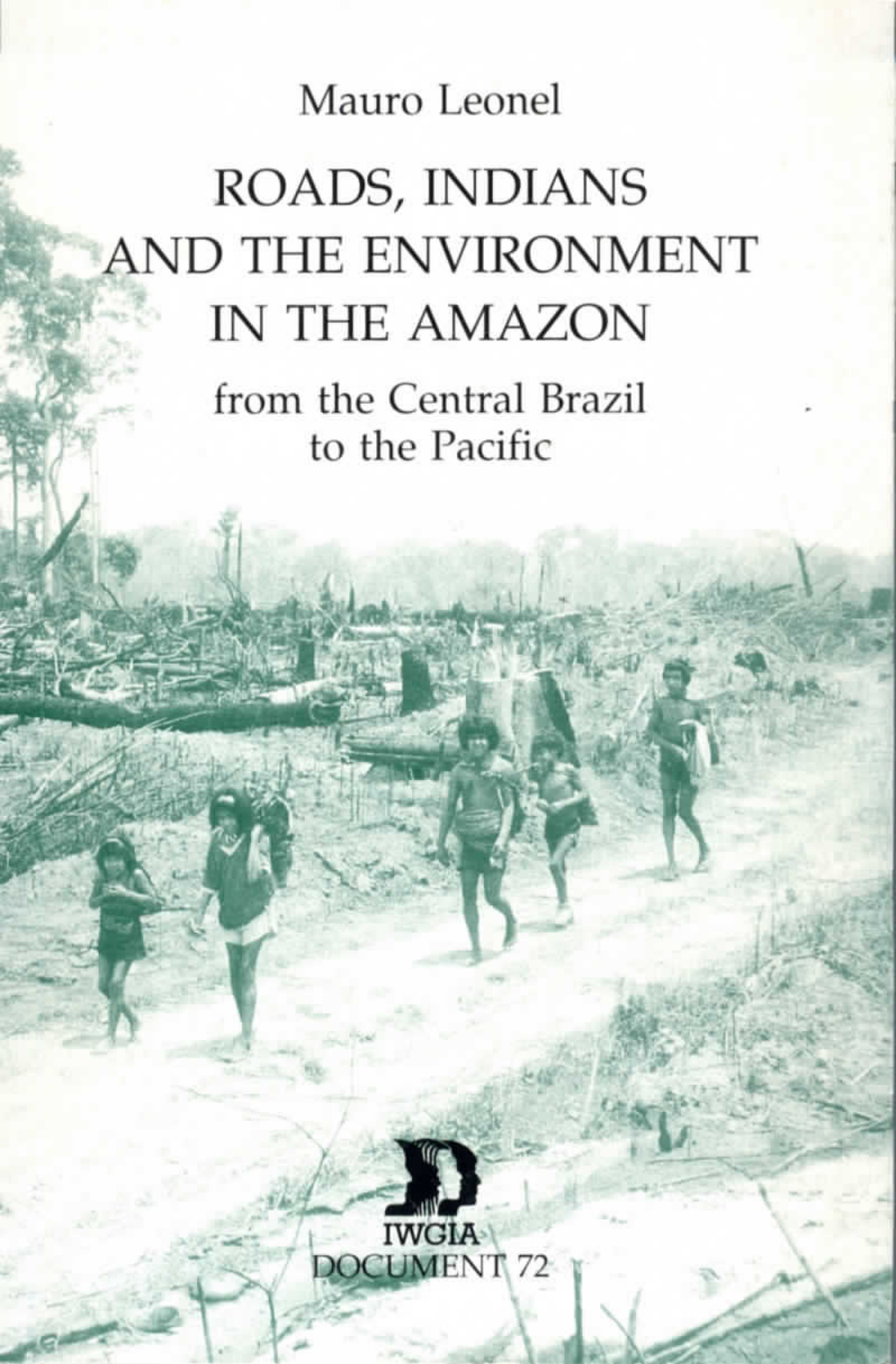


Mauro Leonel

ROADS, INDIANS AND THE ENVIRONMENT IN THE AMAZON

from the Central Brazil
to the Pacific



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to the Pacific Ocean

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He is now President of the Institute of Anthropology and Environment (IAMA) which has its headquarters in Sao Paulo.

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Introduction

This Document contains an unedited work of high scientific value on the consequences of the construction of the Amazonian highways on indigenous populations, non-indigenous people who also use the Amazon and on the environment.

The highways are viewed in this study not only as an instrument for the conquest of space, but also as a weapon of conquest against people. As a focus of economic interest, the highways admit prospectors involved in the extraction of the area's natural resources such as miners, loggers and aquaculturists who are steadily and increasingly extending their borders into new territories. Poor and marginalized social groups are attracted to these new enclaves with promises, mostly false, of new horizons and possibilities for a dignified existence. In turn, they are used as pawns in an intricate game of economic interests in which they are sacrificed on the altars of a "progress" of which they form no part.

The two highways of main access which are analyzed in the text are, in the first instance, the BR-364 included in the POLONORESTE Program (see IWGIA Document no. 6 which gives an analysis of the Programme) which, with its 1,600 asphalted kilometres, now crosses from one part of Brazil to the other: from Cuiabá in central Brazil, linking the south-east amazon to the eastern coast of the country, to Porto Velho in the State of Rondonia in the west. In chapter 4, there is an analysis of the devastating effects which the construction of the network of Amazonian freeways have had on the indigenous populations whose social and territorial rights have been disregarded, the massive, unnecessary and ridiculous destruction of entire ecosystems which will be forever lost. Chapters 4 and 5 present a solid analysis of the consequences of the construction of main and adjacent highways in the State of Rondonia.

Secondly, the Document examines a highway which has not yet been completed: the Pacific Highway. The objective of this highway is to facilitate the export of grain to Japan, allowing access to the sea from Puerto Ilo, in Peru, close to the Bolivian border. The author warns that within the context of non-destructive development, the experience gained in the construction of the highway networks in POLONORESTE could serve as the basis of a study on the impact of the Pacific Highway.

Polonoreste has caused a series of tragedies for many indigenous groups which have valuable experience with the ecological and economic resources of the environment which was destroyed. If Brazil needs a Pacific outlet to reinforce its export economy, this does not have to be achieved at the cost of human lives and the indiscriminate loss of one of the most valuable ecosystems on the planet. Chapters 1 and 2 examine, in generic terms, the taking of specific steps with due consideration being given to native peoples, other groups of inhabitants and the environment, before construction of the highways.

The last two chapters deal with the Pacific Highway. This is the most innovative section of the Document since, for the first time, the highway is studied from an anthropological point of view and with its socio-economic impact taken into account. The target here is not only Brazil, but South America; the occupation of the Amazon is also taking place in neighbouring countries such as Peru and Bolivia. The great value of this work lies in the comparative study which the author develops between some of the highways already built and others under construction. In the first case it is already possible to measure the consequences of a model of development which does not take the human and socio-environmental factor into account, and which therefore wreaks irreversible havoc in the process.

In the second case, a prediction is made on the future impact of the Pacific Highway based on the accounts gleaned from other similar projects. The author proposes the adoption of a series of specific measures in order to avoid the errors of the past. Among these measures is the suggestion that planners and governments should listen to organizations and indigenous groups and that they should be allowed to participate in some of the development programmes which affect them. Simultaneously, he suggests that interdisciplinary studies on the impact of future activities should be carried out and these studies should include anthropologists, biologists, geologists and other technicians who could also serve as independent advisers to the indigenous peoples.

The construction of highways is not innocuous. It carries with it the germ of conquest of new spaces which has always been present throughout history. Mauro Leonel presents this subject in a lively and direct manner and gives us a look at how development programmes can benefit social groups while respecting their ethnic and cultural identities, and safeguarding that great ecological diversity which the indigenous populations have been successful in preserving for millennia.

Teresa Aparicio

1. Roads: From the Empires to Internal Colonialism

It was considered unquestionable, until recently, that roads were intrinsically a benefit, being justified by the fact that they existed. It was even stated that "to govern is to build roads". It was believed that they spread "progress" and "development" wherever they went. Some Brazilian governments even presented the number of kilometres, paved or unpaved, as a measure of their performance. Today it is possible to show that without rigid studies and preventive measures, roads may be negative for traditional communities, particularly for the Indians and the environment.

A caricature imitation was therefore implemented in the tropics, idealized from standards of "progress" of the first world, introducing technological advantages, but also its perverse side. Technology which was aging in the 1st world, was seen as new in Brazil. Whereas Europe and the USA travel by train, diversify public transportation, integrate freight transportation systems, Brazil jeopardizes its future. Linking itself to dependency on petrol, and not counting with sufficient production of this energy resource, it keeps adding to its already enormous external debt. It imports the disastrous model of individual transport, which is expensive, creates technological dependence, is dangerous and polluting, all at the expense of public transportation.

A look at the past. The road is Roman, a pattern of conquest and expansion, strategic in war, a military factor in the foundation of empires. It allowed colonization in the four corners of the world, imposing taxes and behaviour. From ancient Rome to the conquest of the North-American west, it rarely served as a way for peace or for the improvement of the quality of life for the populations. It sought submission, throughout the conquered territories which permitted military or commercial control. Ethnic minorities are therefore exposed to conquest, in a history which repeats itself ad nauseam, imposing migrations and ways of being, until the eve of the third millenium.

On the other hand, it is obvious that technologies, means of transportation, inventions, are great conquests, and economically dependent societies should not be deprived of them, on the contrary, it

is a right. What can be and must be reviewed is the how, what for, where, for whom and in what scale. The intensity of imported solutions created internal interests linked to them, which hinders the diversification, the critical and independent analysis of the social consequences, of the alternatives and adaptations to diverse situations. Not all good solutions are necessarily universal.

The analysis of the Amazon roads in the last two decades is still going on. However, it is quite obvious that delicate and little known ecosystems will be hurt, as well as the indigenous communities and other local populations, such as the ones that live along the rivers and the rubber tappers, even when the purpose is to assist them. There is a major tendency, if not yet consensual, it is at least growing, that studies and preventive measures are indispensable to anticipate such situations.

A still weak civil society, incapable of taking the lead, of proposing its own future, ends up submitting to the imposition of the avid interests of small circles, more effective in articulating and influencing. These interests are almost always disguised under the frightening mantle of technical competence, in a posture that the more vague, the more it is mathematical, inhuman and anti-ethical, whether politically from the right or the left. Technically competent does not always mean socially useful, especially when considering an ethnic minority and its differentiated culture.

On the other hand, the idea that all and every road is destructive and inopportune has been spread. This, however, is not the rigorous treatment that the question deserves: such thoughtless behaviour becomes an easy and comfortable way to disguise the absence of adequate answers. The solutions must be found case by case, according to the interests of society as a whole, which can be clearly and consensually defined.

Some other simple and comfortable explanations have also been brewing in many sectors of opinion, attributing great building projects only to foreign, distant and conspiratory interests, based in Washington, London or Tokyo. As though the citizens under the Equator line were reduced to unconditional surrender and impotence in the presence of a vague, powerful, modern myth. These interests are nonetheless in Brasília, São Paulo, Rio de Janeiro, Belo Horizonte, and often very well entrenched. Depriving populations of ways of intervening, making the enemy inaccessible, when it can be found in the dominating mentality, in the neighbourhood square, in the local power. It can be fought with simple quotidian and efficient arms, such as research, knowledge, votes, opinion, mobilization. No doubt, it is indispensable to reorientate international loans, from large investors, private and multilateral, from the World Bank, the Bank for Inter-American Development, the EEC, bilateral agreements, mainly with Japan, in the case of Latin America.

The most urgent and effective priority is to amplify corrective processes inside Amazon society and government.

Internal Colonialism

There is no doubt that there are great interests from the northern hemisphere which determine public policies in dependent countries. But the intricate spiral of the interests that decide great impact projects, often starts in small regional and national groups. In the Brazilian case, there is the example of the large construction companies, which are not controlled, simply because they, illegally, rule in the corridors of power and control the media.

Of course, it is easy to attribute such frequent disasters and unsuitable building projects to the power and self interest of the large construction companies, some of them internationally known for the good quality of their work. Where there is a road, there is a logging company, a mining concern, agriculture, cattle raising, commerce, a bank or financial company; the whole conducted by a politically engaged elite, taking its turn, to quickly and predatorily promote its own interests. This is a complex and articulated network and the national elite is its core and escapes social control. On the outside, are the settlers without land, or destiny, the miners without roots or horizons. Any reductive explanation tends to weaken the effectiveness of the good intentions of those who want changes.

Great construction projects were the flagships of the authoritarian regimes and these are, in fact, an excellent breeding ground for "hecatomb makers" (a famous expression by Brazilian author Euclides da Cunha). The democratic opening in Brazil, however, shows that many things remain the same, with the same familiar faces and attitudes. The formal advent of democracy does not insure, miraculously, the elimination of the undermining process which determines that public expenditure be directed to private interests.

So where are the promoters of the disastrous public projects in the contemporary Amazon? They should be tracked down in the export model for "development" which needs permanent new frontiers for economic concentration, in the mentality of internal colonialism at the service of a minority in the south-east of Brazil, which wishes to dispose of the Amazon in three ways: Consume it, export it, and get rid of the landless and other marginalized people by settling them there, thus forcing migration, with the promise of adventure and, maybe a quick and short-lived mining fortune or a fragile soil from which they will scarcely get one crop.

Ultimately, it is contained in a universalized way of life, a caricature model from the first world, that imposes technology, creates markets,

internal colonialism, energy dependency, destroying with its passage, the diversity of the human condition and the nature that makes it possible. It is of little avail to hope for a miraculous paternalistic international intervention or of external pressures. They have been important, but their effectiveness shows clear limits. They must be invited to support the strengthening of direct self-representation of populations, sustained by independent local institutions and by scrupulous and independent research. What must be avoided is the illusion of populism and of naive regimentation as well as pseudo-leaderships, media phenomena for urban and external consumption, which are more a guilt exorcism than effective representation.

A democratic society is not built on centralization, whether well intentioned or not. To realize democracy, diversity of opinion is indispensable for its multiplying and corrective effect. In public policies, above all, it is essential to qualify, that is, to encourage alternative independent research institutions, which can offer support and a critical analysis of the organized claims of self-represented populations.

To unburden the heavy inheritance of "progress" and "development", priority must be given to quality of life for the different peoples, particularly for the millenarian pioneers. The Amazonian must be in the planning centre, ensuring the sustainability and renewability of their natural resources and the adaptation of their ways to those of the market, returning to the wise ways of self-sufficiency, substituting dependency by new scales of exchange values, taking into account the scarcity and diversity of resources. It would be useless to try to understand the impact of great constructions while excluding the indigenous and environmental questions from the dynamics of internal colonialism.

1.1 Antecedents of this Document

The researches which originated this report started in 1983, through an evaluation of the impact of the POLONOROESTE Program (Integrated Program for the Development of the Brazilian Northwest) on the indigenous communities and the environment. The Brazilian government administered the project co-financed by the World Bank, via SUDECO (a branch of the Ministry of Internal Affairs). SUDECO put an end to this evaluation, disturbed by the critical independence of the multi-disciplinary team of researchers and consultants from FIPE-FEA-USP (University of São Paulo). There was no political will to correct the distortions that the evaluation revealed. The Collor government closed down SUDECO in 1990, but has not changed the orientation for the occupation of the Amazon interior, and many of its staff still occupy high positions in the government.

In 1986, the Government of Rondônia, pressured and worried by the national and international reaction to the deforestation caused by BR 364 (Cuiabá-MT-Porto Velho-RO stretch), requested a report about the possible paving of one of its branches, BR 429, linking BR-364 to Bolivia, from the city of Presidente Medici to Costa Marques, through SEPLAN-RO. If the said paving had been done, it would have allowed the predatory penetration in the Guaporé and Mamoré Valleys, the last possible conservation regions in Rondônia and Northern Bolivia. So far, the paving has been avoided.

In February 1990 as a member of the Brazil-Peru Commission, the Brazilian Cooperation Agency (from the Ministry of Foreign Affairs) sponsored a report and a 23 day research on the projects for development in Madre de Dios, and the Brazil-Peru road connection, the Brazilian route to the Pacific, adding one more stretch to the vision of impact of the roads under planning.

Through the Instituto De Antropologia e Meio Ambiente (IAMA), an independent and interdisciplinary institution, based in São Paulo, it was possible to proceed with the research in that region. It was not possible, however, to dedicate to the theme all the time needed. Even with a limited bibliographic revision, the gathered data for these reports can give a contribution, an instrument for a revision of public policies, or at least, a warning. It is obvious that as a work, which was requested in different circumstances and purposes, it could not be exhaustive, and is not so intended.

Acknowledgments

All contributions for the improvement of the information and concepts herein expressed will be welcomed by the author, who is solely responsible for the errors and omissions in this work. However, I must express my gratitude to many people- To the Indians, to the rare public employees who took their jobs seriously, to the guides and to colleagues and friends whose names I would like to mention, in the frame of this work: Prof. Aziz Ab' Saber (IEA-USP); Teresa Aparicio (IWGIA); Gustaaf Versweijvert, who criticized pertinently; Maritta Koch-Weser, Robert Goodland and Shelton Davis (WORLD BANK); Philipe Fearnside (INPA); Peter May (FAO); Emanuel Fulton Cassara and Samuel Mirage (SEPLAN-RO); Diana Mindlin; José J. de Carvalho Fo.,(FIPE); Prof.Sergio Miceli,-(IDESP), Prof. Francisco de Oliveira (CEBRAP); Prof.Humberto Labarthe (ACSSP), Thomas Moore and his colleagues from (EORI), among other Peruvians; Francisco A. de Arruda Sampaio (IAMA)- who participated in the researches in Peru and of course, Carmen Junqueira and, particularly, Betty Mindlin and all those who cooperate to make IAMA a production centre in the inter-relations of the environment and social issues.

2. The Impact Concept, Zoning, Interdisciplinary Involvement and Participation

This is the first methodological challenge. The revision of the impact concept of roads. Lately, because of the criticisms about the carelessness with which roads were built in the Amazon in the last decades, the Brazilian Government has allowed some previous impact studies, but they are "for the English to see", a popular expression in Brazil, which means they are not to be implemented, but are only an answer to the critics.

The staff responsible for highway planning appointed an engineer to take charge of the environmental issue. By himself, even if competent, he could not change anything. In most cases, the Brazilian government, the big construction companies and inter-connected consultant firms work with a quantitative, therefore arbitrary, definition of the implications of great construction projects on the populations and the natural resources, which are exposed to massive exploitation by the penetration roads. What is proposed here, is a revision of this method, which has been proved inadequate, with serious consequences to the populations and the environment.

Frequently, opinions diverged on the range of the impact area, which varied from twenty to one hundred kilometres in a straight line, around the road. The region was never considered as a whole on the maps, but merely as the roads borders. However, the qualitative question is not in the distance as seen on the engineer's desk, but in the ecosystem, and in the socio-economic reality of the populations involved but the experts, usually competent construction companies, intend to limit preventive measures to the distances obtained by straight lines drawn on maps.

They do not understand that the peoples with their cultural diversity, the ecosystems, the river basins, should determine the adequacy of a highway plan, and not let the highway impose reality as has been happening. The bosses who order impact studies are in a hurry and bureaucratic control does not intimidate them, studies do not change routes, they merely give bureaucratic satisfaction to legal requirements, and they do not care about the consequences.

A highway, like other great construction projects is an inevitable attraction magnet, and rapidly becomes a connection channel for all

kinds of activities in a region. It quickly becomes the main line for numerous secondary roads, service roads, large and small forest trails, improvised waterways and road branches. Therefore, everything will be done to reach it, making it a distribution centre, which will also attract river transport from river banks that permit access to the new highway.

A road should not be considered singly, in terms of public policies, but as part of the whole network of roads, the regular ones as well as the irregular, which are encouraged by private interests, such as logging, agricultural, cattle and mining concerns. A plan should not be obsessively road minded, but as a complex transport and communications plan, which should be pre-analyzed in the context of its socio-economic and environmental implications.

Such plans should not grant privilege to road transport. The project should begin from the needs of the local populations. The needs suggested by the international market may be adapted to the plan and not be imposed on the regional reality, making it adapt to the public projects. On the contrary, development should be first thought out from the inside, making the region self-sufficient, before considering the outside.

The impact of a public project can only be measured by all the alterations it will cause, by the connections it will begin to centralize, as the main route of communications and transport. Its foundation should be the search for quality of life for the regional population

A road is never an isolated work

When a road is built, other projects follow it, as well as wide ranging productive activities. The most evident are the hydro-electric power plants, the mining companies, logging, agriculture and cattle raising companies. An adequate highway plan should be started by a detailed study of the serious energy problems, which are introduced by the development model desired for that region. Such a study must consider less conventional hypothesis, combinations and alternatives, such as biomass, small scale hydro-electric plants, small water-power generators, solar, among others, which are available in the region.

Another unavoidable element is mining. In this research it was not possible to make a survey of the incidence of minerals in the mentioned examples, but an in-depth survey is indispensable to assess the inevitable impact on the population and the environment, caused by river gold mining, which leaves mercury residues, and by the waste from the extraction of cassiterite, bauxite and other minerals which contaminate the Amazon rivers, some of them forever.

The key question is in the conceptual view, which directs the standard projects for regional development. The other components are

treated as complementary to the highway work when, frequently, it should be the opposite. The development plan for a region should take into account the social and environmental aspects, and not be conditioned to the eventuality of a great public project. It should precede it conceptually, in its planning chart. This is also true for settlements, agriculture and cattle raising projects, which are generally planned in a hasty and inopportune way.

Grave distortions are created by a type of project, such as the PDRI- (Integrated Regional Development Project) which were actually, disguised roads and were in vogue in the last decade and should not be repeated. Although, some of these projects have safeguards to protect the Indians, the environment and more recently, the rubber tappers, they do not solve the problem. They are included as ornaments and do not contain previous experiences as preventive measures.

It is possible to consider certain roads as necessary and as appropriate means of communication. However, the proposed proceedings are inadequate. The same is also true for the settlement projects, the protective measures for the Indians and the environment, which are not properly and clearly expressed, looking more like an improved package for the viability of the central work, the highway, or the hydro-electric plant, as has been seen in the recent past.

Some government executives have requested opinions or evaluations from consultants, but they do not tolerate any questioning of the principles of a given project. All the precedences, such as the Carajás and North-South railways or in the case of highways, BR-364, BR-429 or the Pacific highway, would need long, interdisciplinary studies. Past experiences urge us to revise fundamental concepts of major responsibility, not just altering, contributing, completing or corroborating secondary aspects, or even some important items of a given project.

Here, the proposal is for an ample conceptual revision, the elaboration of a new system for projects, in which the leading centre would be the adequate use of natural resources, starting from the populations currently occupying these regions. Such a system would be preceded by charts and environmental zoning, and only after their completion, would it be viable to consider settlements or great construction projects, making sure that the populations directly involved are heard.

Its conclusion should culminate in a concrete inter-disciplinary contribution for the outlining of this new system, which would adequately introduce the inter-relation between the social and environmental issues involved in great projects for the Amazon. In particular, the ones related to sustainable economic routes and alternative energy solutions.

Mixed and Integrated Transport

The Brazilian Amazon, has twenty five thousand kilometres of navigable rivers. The first migration, started by the rubber extraction cycle, and by wood and mineral ventures, created river transport networks, more or less informal, according to the market demands. Road building in the Amazon did not consider alternatives nor the realities or specificities of the region, not even for the articulation between different modalities.

This caricature version of the North American development on four individualized wheels is the representation of an adulterated original. Economies that are considered developed are being forced to give preference to railway transport. Entire regions were also developed starting from river transport, such as the Mississippi Valley. Even when other modalities were being introduced, the fluvial ways were not dismantled, such as the Rhine and other rivers in European countries. The articulation among railways, highways and waterways is common in other countries. For example: Until now, there is no two lane road between Berne and Geneva, simply because their citizens democratically vote against it.

This distortion in Brazilian highways, which is frequent in the southern hemisphere, has created expensive energy, technological and external dependencies, beside the high costs of maintenance. In the past, no attention was given to the impact on populations or the environment; experts, generally engineers, working in separate units, were entrusted with the global competence to build. Contemporary requirements call for a multidisciplinary treatment, where competence is no longer a protection mantle for obscurantism.

In this view, it is indispensable to have unequivocal answers for having chosen a certain transport modality and for the possibilities of combining different options. Moreover, because the impact on the ecosystems and populations differs according to the means of transport being adopted and the type of combination and inter-modal solution that can be found. Starting from the quality of life of the involved populations, is the only ethical basis for public policies.

A more detailed analysis must be made of the weight of the construction companies which end up financing the government, becoming its creditors. They are the most interested party favouring the highway option. Mendes Junior Construction Company, for example is one of the interested in the BR-429, and the Pacific Highway, "it has about US\$360 million to receive from the government for projects already realized and the money is taking long to come" (Veja magazine 5/13/1987). Despite this, the company had a profit of 521 million cruzados in 1986 and has 35,000 employees. It was responsible for most of the Transamazonia Highway.

Actually, one does not know if the construction companies exist to build projects or if the projects exist to favour the companies."The Brazilian Industrial Engineering Association has 120 associates, some of them, Camargo Correia, Mendes Junior, Tenege, Norberto Odebrechet, Andrade Gutierrez and Montreal- together, invoiced US\$ 5 billion in 1987..." informed the president of the association, Fernando Couto Marques Lisboa, adding that the government owes these companies CZ\$ 75 billion (O Estado de São Paulo 3/11/1988)

2.1 Interdisciplinary and Public Debate

The interdisciplinary manner of public planning was seldom taken into account for large impact projects in the past. Professionals from the various areas of large consulting companies were frequently invited, but it was more to validate an option already chosen than to stimulate the rigour with which public policies should be treated

Resorting to the help of experts and assuring critical freedom is indispensable. However, it is more important to promote an ample debate with the scientific community, particularly, from the involved neighbour countries. This question is of major importance as there is the perspective of an broad frame for negotiations between Brazil and its neighbours in the Amazon pact and about the trans-frontier project. Due to the peculiarity of the relative dependence of Amazon countries on the first world, there is a gap between the recent occupation of the region and the basic scientific studies that could direct this occupation process.

This gap could be breached by encouraging a multilateral, regional exchange, involving all the Amazon countries, as a support to the recent diplomatic effort developed in the same direction. It is a paradox that there are more American and European researches and researchers, than there are from the directly interested countries. These researches did not have an integrated point of view, which could give concrete answers to the emerging problems of the region. They generated knowledge, often useful, but disconnected and not up to date with reality. This lack of research is still more evident in the social sciences and environment fields. Anthropologists and sociologists are often considered unnecessary and boring. They are only called on to sign reports, as though they were a public notary's office.

It is important to hold meetings with the scientific community, to exchange information and opinions with experts in the various areas, and with private organizations. Most of all with the representative organizations of the Amazon region: the Indians, the people who live along the rivers, the rubber tappers, should be the first to be heard through the local organizations. A hermetic concept has been spreading in public planning, crystallizing the idea that the more selective and

restricted the involved, the better the results. From this secretive practice, from this excessively technocratic vision, numerous distortions occurred in public planning. In the broad spectrum Bi- or tri-national projects, such as those that are being discussed in the Amazon pact, it will be necessary to open high level public debates, making a profound study of the democratic decision making proceedings, which are about to be legitimately consolidated in Brazil and in the neighbouring countries.

Previous Social and Environmental Zoning

New large highway projects, must be preceded by rigorous previous zoning. It would be advisable to establish scenarios of the possible implications of the highway passage through the pre-chosen regions, envisioning the preventive measures for the adequate use of the natural resources and for the existing populations. These studies should also include the standards of redefinition of the design itself, which must not be decided only by construction engineering, but in an interdisciplinary way.

A good example to enforce this recommendation is the CARAJÓS RAILROAD. After it was completed, the experts from the Vale do Rio Doce Mining Company, re-analysed the line and came to the conclusion that it would have been more efficient if it had avoided the Gavião Indians area in Pará. It would have been a few kilometres longer but it would have by-passed serious conflicts. Prevention being better than cure, it would have avoided a heavy burden to the Indians, to the government and to the company. Preventive measures could have moderated the devastation caused by the railway.

The methodology for the zoning herein proposed is enunciated through previous experiences of the IAMA team, starting from a pre-established technical-scientific direction which has been accumulated. A trial was attempted during the Program for the Environment and Indigenous Communities (PMACI-II), in 1986, a study which used part of residual resources of the POLONOROESTE Project, in collaboration with consultants, experts from the Seplan (Secretary of Planning) and the World Bank. The Brazilian government ended up abandoning the project, pressured by the military, although it resulted in a clear vision of the indigenous and environmental issues for the north of Rondônia and the south of the States of Amazonas and Acre.

A second attempt, which also failed, was the Planafloro, in 1988, which involved an agro-ecological-economic zoning for the State of Rondônia. It failed once more and the gaps in its conception and execution were due to inappropriate politico-bureaucratic interference, owing to short interests. The most recent attempt was in Manaus in 1990, by private institutions, with the support of IBAMA, with a workshop on

bio-diversity with the participation of many scientists. In that workshop, different visions were identified; the most prevalent was a limited one, the sum of researches for the protection of limited sanctuaries for specific species.

This type of attempt also tends to fail, if it is not integrated into the Brazilian and South-American scientific communities, and if it continues to be directed from the outside, from the northern hemisphere. An adequate zoning must begin from the specific socio-economic situation of these countries, taking into account the existing preoccupation, the grave problems caused by the advance of the economic frontier and the appropriate use of the available natural resources, its renewability and the traditional Amazon populations.

Such initiatives require a strong political will, but they could create the indispensable social consensus towards the aim of using the Amazon space in a suitable way. This would not be the type of zoning to respond to the needs of a specific project, such as a highway, a hydro-electric plant, a mining company, colonization, agriculture, cattle raising or forest utilization. It is not the space that has to be conformed to the project but the latter has to take into account the social-environmental variables. This vision was unfortunately lacking in previous attempts for regional development, which started from a hydro-electric plant or a highway, although environmental concepts were introduced in some degree by Eletronorte, DNPM and DNER.

Zoning by Cells and River Basins

This type of zoning, as was indicated in the proposal made by IAMA-Brazilian Institute for the Environment and Renewable Natural Resources, the World Bank and Conservation International, must begin with a basic chart, as recommended by Professor Ab'Saber, divided into regional cells containing the hydrographic network and the outlining of the most noticable topographic compartments; the climatic and geological, soil and vegetable distribution; including communication systems, urban centres, indigenous areas, preservation areas; mining concerns, projected works, forest patterns; and including existing occupations, encompassing all variables; socioeconomic as well as cultural and bio-diversities.

This is a basic research, which requires bibliographic up-dating and field research on a permanent basis for socio-economic and socio-environmental planning. The possibility of great projects must induce greater urgency to these basic studies, applying them, not only to a region, but to the Amazon as a whole. It is deplorable that zoning as applied up to now, has only considered agriculture in the form of

farming and pasturing and not the populations and the appropriate usage, as presented in this proposal.

The Basin Concept

It is indispensable to introduce the basin concept in the social-environmental planning herein proposed. The highway is no longer the planning centre. The centre is the renewable and sustainable use of natural resources and the first one is water, the hydrological resources. Brazilian legislation is very clear in the protection of the sources of rivers and their banks, as expressed in the Forest Code. The highway projects would have to be considered starting from the river basin as a whole and not the reverse.

Professor Aziz Ab'Saber in a lecture has warned that in 80% of the Amazon space, "any devastation in a continuous stretch, along the secondary tributaries, imperils the perpetuity of the draining in the source of the "igarapés"(smaller tributaries), and as the devastation of woods grows along the springs, so is endangered the perpetuity in the high valleys of the small igarapés". He also reminded that the greatest devastation fronts come from the big highways or from "important interfluvial sectors, where federal or state highways are located, and so were responsible for the arrival of large scale agriculture and cattle raising farms, which use fragile pastures near the "igarapés" springs, the continued existence of which are now in peril. " He also referred to "the legal or illegal appropriation of land along the highways, service roads and railways".

Among other important reasons to consider all parts of the river basins are: to guarantee the multiple use of the rivers, their navigability, fishing, water supply to urban centres, their use for energy production, tourism, agriculture, etc.

Zoning Implementation Before Building

The socio-environmental zoning that is necessary for the Amazon as a whole, can not be summarized in a chart of the environment. It is only an instrument for preliminary work, an indicator of the measures to be taken before starting any great work. Such corrective inversion was proposed by the evaluation of the Polonoroeste Project, in the case of the PMACI I and II, after the bitter experiences of Rondônia and the north of Mato Grosso. The government nevertheless decided to permit the paving of BR-364 from Porto Velho to Rio Branco. It was started even before preventive measures were defined. The demarcation of nine Indian areas was scheduled for the first year, but only one was financed by BID and until today, five years later, no area has been regularized.

Not only has the area been restricted in its range to fifty kilometres from the highway, but the program for paving was released with no respect to the socio-environmental measures. The same occurred with the extraction reservations for the rubber tappers. Of the fifty reservations considered for the State of Acre, only three are being established and none have been concluded. In Rondônia, only one of the 35 areas studied by IAMA has measures for regularizing property.

One can only hope that in the future, procedures will be different, ensuring that the planning chart for preventive measures conditions the beginning of any development program. One should avoid placing the suitable use of natural resources and the rights of minorities on a secondary level and the presentation of false planning dates for the projects.

Besides conditioning the beginning of the undertaking, preventive and corrective measures must continue conditioning its different stages, or the social and environmental tasks will be ignored by the bureaucracy and will not be executed. When the work is finished, preventive measures become only corrective, or even useless.

A time must be set for these measures to be planned and taken. The forecast must condition the beginning of a work so that when the paving of a road is begun; the forest reservations, the indigenous areas, the renewable use of natural resources and the participation of the communities will already be implemented. Strictly conditioning the programs will avoid the repetition of antecedents such as the POLONOROESTE and PMACI, in the case of Brazil.

The Concept of Conservation of Natural Resources is Evolving

Although some ecologists continue to treat the defense of endangered species in isolation from their ecosystems, or against the economic pressure that creates ecological disasters, the conservation concept is evolving to integrate public planning as more than a variable, as a philosophy, a way of being, whereby sustainability, long term renewability, and quality of life are the key words.

In the beginning, the creation of some preservation areas were included in a plan almost as a compensation for the projected work. Today it is known that the issue is quite extensive. Sanctuaries and preservation areas continue to be extremely important to the protection of the environment. However it is necessary to consider the adequate use of natural resources and the predictable economic utilization practices, such as logging, mining, river gold mining, agriculture, cattle raising.

There is also a growing preoccupation with the environment in the legislation. A considerable advance was achieved in the Brazilian Constitution, although it is not yet adjusted. It is important that studies

be promoted so that the environment legislation of all Amazon countries will be compatible, in particular with reference to forest resources, deforestation, tax-exemption incentives, environmental impact, ecological crimes and in relation to traditional populations and the adequate use of resources.

Guaranteeing the Indians right to involvement in decision making

In Article 231 of the Brazilian Constitution of 1988 it is provided that to install a hydroelectric plant or a mining concern in Indian areas, it is indispensable to have approval by the Congress and that the Indian communities be heard. It is important to provide the procedures for the two cases. A serious omission is that the Constitution does not provide a way to control roads, since they are the corridors whereby the other invasive activities have access, and not only logging, agriculture, cattle raising and settlers.

On the other hand, the expression that "the Indians be heard", if not better assured and regulated, does not mean much. It is true that Article 232 warrants the Indians the right to appeal to the Judiciary, through the Ministry of Justice, but only after the fact, and perhaps too late to avoid disaster, considering the sluggishness of justice.

There is also the complex question of the who should represent the affected communities. Frequently FUNAI elects new Indian leaders, who happen to speak better Portuguese, instead of traditional leadership. On the other hand, the Indian movement as a whole, in spite of advances, still does not have its representation and legitimacy founded in the communities, even less in renewed periods. This is why it is of the utmost importance to guarantee their right of decision. There are urban leaderships, generally mixed blood ex students, who have strong support among whites, but who have lost, for more than a generation, any roots in their own communities. Inexperienced in democratic ways, they have a tendency towards "caudillismo" (tyranny), and they claim a representation which is not confirmed by other leaderships or are manipulated by religious sects of European or American origin. Indians should be heard directly.

In this perspective, and since the large enterprises, state or private are very well represented, so should the people who are directly affected. They should be assisted by lawyers, technicians, anthropologists, geologists, sociologists prepared to give their independent opinion and criticism on the projected enterprise.

These measures are indispensable for the Indians and the traditional Amazon communities, as well as for the populations living on the rivers. Unlike urban people they have precarious representative organization, their representation has been mixed with the rural workers' leaderships

and their influence in Congress is very limited. Their national movement, although well known due to the media interest and greatly expanded since the assassination of Chico Mendes, is still far from having taken roots in all the Amazon.

Exclusive roads for the Indians

After some years of contact, some Indian communities request for Access Roads, to facilitate health care and as a production outlet. This is the kind of road that exists in the Karitiana Indian Area, which does not promote invasions, but nonetheless requires constant watching so that it is not transformed into an invasion corridor or a means for the interference of tourism in tribal life. This is not to be confused with regional traffic roads, and the Indians must be well advised as to the best design. This type of road should not be open for major, uncontrollable traffic in the indigenous areas. To make this possible, it is necessary to guarantee that others will not use them. They should be built for the community and not to link towns by traversing their lands.

Rights of usufruct in indigenous lands

It is known that there is a great distance between the law and its application. In the case of Indian rights it is even greater. In the last decades the tradition of the administration of justice and constitutional precepts have been hampered by many exception rules concerning Law #6001, of the Indians Statute, by decrees or by administrative dispositions. This way it was possible to install roads, hydroelectric plants, logging and mining companies etc. There was even an attempt to extinguish those rights in the Constituent Assembly, but they were partially upheld, although they are not yet regulations.

According to the last two Brazilian Constitutions, the one sanctioned by the military 1967-1969 and the current one of 1988, Indian lands and their resources are decreed to "their exclusive usufruct" - Article 231 paragraph two. It is a matter of legal tradition, of a major social consolidated consensus. Therefore, Indian lands are not to be disposed of by public or private enterprises.

Brazil is one of the signatories of Convention 107 of The General International Workers Convention of June 6th, 1966. The convention warrants in Part II, article 11, "Property rights, collective or individual will be recognized for the members of populations interested in the land they have traditionally occupied" and adds in Paragraph II, article 2, "measures will be taken to prevent that persons unknown to these populations may prevail on their customs or their ignorance in relation to the law, to acquire property or the use thereof of lands that belong to these populations.

Briefly, "The holding is of permanent character and the fruition exclusive" (Junqueira and Paiva 1985:14) and also "actually what determines the property right is the immemorial property rights of the Indians to their habitat, which is considered as a congenital right of the primitive land owners"

"Even if Indian lands are possessions - explains lawyer Paulo Guimarães 1961:1 - they have highly qualified legal status in the Brazilian agrarian context, including an exception and attributing to them a special distinction, to the point that its owner, the Union, does not have the holding and cannot make use of their riches and cannot alienate them" It is, therefore, a congenital right of primitive occupation.

Consequently, the dozens of dams, mines and roads already built or programmed, are unconstitutional and illegal in the framework of the conventions and legislation which Brazil has co-signed and in the eyes of the majority of its citizens. The conniving omissions of FUNAI, the volume of resources and the public power given to the builders, the electricity companies, the DNER and DNPM, has made possible the interference of public and private projects in Indian lands.

FUNAI, nevertheless, is shielded by a regulation of Law 6001 of 1973, which, in article 20, opens precedents which contradict the constitutional text "In an exceptional case or for any of the motives mentioned above, the Union may intervene in indigenous areas if there is no other alternative solution, and this can be determined by Presidential decree". In paragraph I it authorizes the intervention "to realize public projects which are in the interests of national development".

Through this short cut, FUNAI has been betraying the explicit constitutional precept. "But permitting, admittedly an absurdity, the implementation of hydroelectric plants on Indian lands, all the requirements of Law 6001/73 must be respected" (Guimaraes 1986:2) Although the Law does not take preference over the Constitution, even exceptionally, says Guimaraes, it has to be proven by technical reports that there are no other alternatives; the exceptional character of the projects; the reason for choosing a place. "Through Presidential Decree, stipulating its conditions of execution and always by convincing facts".

In the case of the relocation of indigenous groups, Law 6001/73, as well as Convention 107, clearly state the assigning of an area equal to the former in its entirety, regardless of other forms of indemnity. And also, that the assigned area must allow the Indians the maintenance of their specific way of life, besides being compensated for the damages caused by the relocation, as provided by Law 6001/73 in Paragraphs 3 and 4.

Even using the excuse of the interference of law 6001 into the Federal Constitution, the truth is that the energy sector, the DNPM and DNER have in no case respected the obligation of establishing the absence of other alternatives, and to be consistent with the Constitution, they should

refrain from flooding, exploring and trespassing Indian lands, in every case, even when counting with FUNAI's conniving tolerance.

To reach this objective, it is essential to have rigorous and competent technical proof of the absence of other alternatives and, simultaneously, to have the direct participation of the Indians, of anthropologists, lawyers and other experts, since FUNAI has been continually incompetent, also in the case of "relocation and/or indemnity", here admitted as "absurd".

The careless practices used by the electricity production sector, the DNER and DNPM, on Indian lands, leads us to understand their way of thinking, that: Indigenous lands present less of an obstacle because the Indians have large undeveloped spaces, i.e. with few buildings, and with less resistance capability. There is no understanding of the fact that the space reserved for the surviving Indians is necessary for their continued existence as a people, with their unique cultural unity and their right to cultural difference.

Public policies are mistaken in supposing that such practice is less expensive or gives fewer problems. The Indians can and will continue to strive for the re-establishment of their rights and have done so, and this may force society to pay later, that which the haste for development has tried to avoid. The growing strength of the Indian movement, both regionally and with the solidarity of civil society groups, show that if governments continue such practices, they will be inviting conflicts.

The government is incapable of responding to ethical appeals with reference to coexistence between different peoples, it is also incapable of recognizing the privilege of learning from minorities which have thousand year old cultures. Still there is hope for some change in the future.

At least in one case, justice was done to the Indians, forbidding a road in an Indian area in Rio Grande do Sul, by a court order requested by ANAI (RJ). To avoid that the judiciary be the last despairing resource, after the fact, it is necessary that the theme "Roads" be seriously taken into the legislative regulation and the revision of the Indians Statute.

The Concept of Impact upon Indians

If dams, logging and mining bring inconvenience for the populations to be relocated, such as the populations living on the rivers and the river gold miners, to the Indians, they bring a veritable "hecatomb". The local populations are putting up more and more resistance to the decisions that interfere with their quality of life. What has to be understood is the uniqueness of their way of life.

It is impossible to evaluate the impact on cultures that are different from ours by simple supposition. Their values are different - land cannot be exchanged, not even for an equivalent - or a river for another, a

waterfall is not exchangeable. In the space where Indians live, other living beings such as plants, animals, fish, are part of their being and compensation is as impossible as to be equivalent to disappearance, death, disintegration.

If it is difficult to establish an impact criteria to indemnify or reimburse the rural producer, the rubber tappers or the river fishermen, it can be imagined how difficult it is for unique human groups, whose way of life, in most cases, is absolutely unknown and is impossible to transfer or relocate.

Bearing this in mind, the impact concepts with which the government and FUNAI have been working are arbitrary, and cannot be applicable to the Indian condition and should be reviewed, with Indian participation assisted by anthropologists and specialists in indigenous law.

The interference of flooding is frequently admitted as more harmful than roads, but for the Indians, it must be considered that land is not negotiable, it is part of their way of life; its ownership is inherent to their cultural difference. Account should be taken of all that has been destroyed by floods; plants with their diverse functions, fish and animals that are essential to their survival, religious and ritual places, all that does not belong to the dominating cultural values must be identified case by case.

It must be admitted that industry, roads or mining, in or near an Indian area or river bring with them, not only a direct threat but also all the implications of the regional development they stimulate. They increase land values and invasions are immediate. Colonization brings irregular roads, wood theft, corruption, disintegration of tribal life, prostitution, etc. not to mention the diseases that are fatal to the Amazon groups, besides the ethnocentric arrogance of missionaries, FUNAI's authoritarian ways, the mining companies and the river gold miners, which are disputing the Indian lands inch by inch...

It is urgent and essential to emphasise the impact concept or the interference of the hydroelectric power plants, mining and logging in Indian lives, in terms of preventive and corrective action, as well as the incentive to resistance and participation of those effected by the decisions. In two ways: Case by case studies and the revision of what has already happened, with detailed analysis of the effects, before and after. If we start by admitting that the government's attitude is anti-indigenous, the most serious threat is to the isolated groups in the interior of the Amazon.

Isolated Indians

This is the gravest problem in planning roads for the Amazon, and it is both fundamental and urgent to consider these groups in the revision of legislation. The Arara (PA), the Uru Eu Wau Wau of the Guaporé group, the Yanomani and the Karib groups in the extreme north of Brazil need special attention. There are approximately 40 isolated groups in the interior of the Amazon, the most numerous, apparently, are those of the Javari in the north of Roraima and in Pará.

3. Examples of Roads without Previous Guarantees to Indian Lands.

Here are highlighted some cases which are part of a long list of experiences in this century and some of the lessons they teach. Some of these cases are widely known, through the works of Darcy Ribeiro, Berta Ribeiro, Shelton Davis, among others, and CEDI and CIMI publications. They are quoted here to give an outline of the effects of roads on Indians and an up to date review of the reality of Rondônia and the projected Pacific Highway.

It is obvious that roads are not in themselves the cause of the decimation and destruction of peoples and ancient cultures and of territorial usurpation. This is a result of many actions that characterize internal colonialism, a road is merely an instrument of infiltration. The examples of roads that brought negative consequences to the Indians were selected mainly from the Brazilian Amazon

Railway	State	People
Noroeste	SP	Kaingang
Madeira-Mamoré	RO	Parintintin, Karipuna, Acanga-Piranga, Orouari, Arikem
Carajás	PA	Gavião
Tocantins	PA	Assurini/ Parakanã

Road	State	People
Transcametá PA-156/BR-153	PA	Assurini
Transamazônica and BR-319 (BR-230-404-317- 364)		29 groups
BR-230	AM/ TO	Parintintin, Mura Pirahã, Tenharin, Apinayé
BR-153, GO-134, G O-370, TO-134	TO	Xerente
Transaraguaia	TO	Parque do Araguaia: Avá Canoeiro, Javaé, Karajá
Minera Paranapanema	AM	Tenharin, Waimiri / Atroari
BR-317	AM	Apurinã
BR-307	AM	Desano, Tukano
BR-230	PA	Marabá/Itaituba stretch Gavião, Suruí, Arara, Munduruku, Xambioá, Xicrin, Parakanã
Estadual PA-279- Redenção/ S. Félix.	PA	Xicrin
PA-222	PA	Gavião
Autopista Tocantins	PA	Parakanã
OP-2- Militar	PA	Suruí
MA-122	MA	Guajá
MA-226	MA	Guajajara
Amarante Ruta Municipal	MA	Gavião, Guajajara, Tabajara

Road	State	People
MA-280	MA	Krikati
BR-316	MA	Guaraní, Guajajara
AM-465	AM	Mura
Perimetral Norte- BR-174	AM-RR	Ingariko, Deasano, Tukano, Waimiri/ Atroari, Makuxi, Wapixana
RR-202, RR-205, BR -401	RR	Ingariko, Taurepang, Makuxi, Wapixana
RR-348, RR-170, RR-050	RR	Wapixana
RR-319	RR	Taurepang, Wapixana, Makuxi
Perimetral Norte- BR-210	RR/AP	Wai-Wai, Karafawyana, Waiãpi, Ianomami
BR-156	AP	Galibi, Karipuna, Palikur
BR-163-Cuiabá- Santarem- Suriname	MT/ PA	Kreen-Akarore
PA-70 ou 332	PA	Gavião
BR-316. Belém/Brasília- Bragança/Viseu	PA	Tembé
BR-226. São Domingos/Porto Franco	MT	AI-Guajajara and Morro Branco
BR-80 Xavantina a Cachimbo		16 peoples from Parque de Xingu
BR-80	MT	Xavante, Kayapó Metuktire
MT-383	MT	Bororo
MT-319	MT	Enauenê-Nauê, Nambiquara, Cinta- Larga
MT-170	MT	Pareci, Nambiquara, Iranxe

Road	State	People
MT-100	MT	Karajá
MT-312 y BR-158	MT	Xavante
MT-220	MT	Apiaka, Kayabi
BR-70	MT	Xavante, Bororo
BR-364	MT	Nambiquara, Rikbatsa, Pareci, Enauenê-Nauê
BR-364 Parque do Aripuanã	MT/ R	Cinta-Larga, Surui, Arara, Isolados/Kawahíwa, Zoró
BR-29 ó 364-Vilhena/Jamari	RO	Boca Preta, Boca Negra, Arikem, Caritiana, Urupá
BR-364	RO	Gavião, Arara, Karitiana, Kaxarari
BR-429	RO	Uru Eu Wau Wau, Jururei, Karipuna, Orouari, Macurap, Tupari, Jaboti, Aruá
BR-421	RO	Uru Eu Wau Wau, Karipuna, Orouari
BR-425	RO	Orouari
Carreteras de Haciendas	RO/ MT	Cinta-Larga, Gavião, Arara, Zoró, Pareci, Mequens etc
Madereras	RO/ MT	Cinta-Larga, Gavião, Arara, Uru Eu Wau Wau, Mequens, Nambiquara, Tupari, Macurap, Aruá etc
Minera Brumadinho	RO	Uru Eu Wau Wau
Construtora Mendes Jr	RO	Kaxarari
BR-364	AC	Kaxinawa, Katukina/Pano, Arara

Sources: FIPE (1983/87). IAMA, FUNAI, CEDI/PETI (1990). Eletronorte.

Planned road	State	People
AP-310	AP	Galibi
AP-220	AP	Galibi, Karipuna
AP-230	AP	Ticuna, Galibi, Karipuna, Palikur
AP-160	AP	Waiapi
PA-265	AM	Saterê-Maué
AM-080	AM	Munduruku
BR-307	AM/ RR	Cocama, Ticuna Ai Javari: Canamari, Aislados, Korubo, Kulina, Marubo, Matis, Matsé, Tsohom Diapá, Yanomami
Perimetral Norte	AM	Baniwa, Baré, Coevana, Desano
BR-230	AM	Ticuna, Katukina
BR-317	AM	Apurina, Paumari
RR	RR	Waimiri/Atroari
BR-202	RR	Makuxi
RR-206	RR	Makuxi, Wapixana
BR-174	MT	Cinta-Larga
PA-108	PA	Guaiá, Kreiê, Munduruku, Tembê, Urubu Kaapor
PA-167	PA	Kaiapó, Kararaô
PA-252, PA-108, PA-158	PA	Tembê, Turiwara
BR-080	PA	Mundaruku
BR-163, BR-210	PA	Akuriô, Kaxuiana, Tiriyó, Waiapi, Wayana-Aparai

Planned railway	State	People
Ferronorte	MT	Bororo

Source: CEDI/PETI (1990)

Estrada de Ferro Noroeste do Brasil (Brazilian Northeast Railroad)

Promoted by the coffee culture expansion in the beginning of the century, connecting Bauru in the State of São Paulo to Corumbá, in the State of Mato Grosso, with plans for a connection with Bolivia and the Pacific.

The presence of Indian groups in the northeast of the State of São Paulo was well known but no previous measures were taken except: "The Federal Government supplied arms and ammunition to the employees, encouraged a number of colonizers who would settle along the lines and was largely responsible for the supply of immigrants" (Carvalho 1979:69)

The outcome was : "The government had to send soldiers to protect the construction work and sometimes had to substitute the manual workers by specialized battalions. (Carvalho 1979:69). Indians were reduced from 700 to 200, in 1916. Malaria, the flu and massacres had already reached them before the contact, but mortality was aggravated by their immobility (Ribeiro 1979:275). The Indians defended themselves as well as they could, attacking the railroad at various points for several years, but they were defeated. There is a vast documentation of these massacres, which cannot be contained here." (Ribeiro 1979 and Carvalho 1979). The Kaingang of São Paulo told their pacifiers of their effort to appease the workers' groups who advanced into their territory (Ribeiro 1979:86).

Estrada de Ferro Tocantins (Tocantins Railroad)

The Aku-Assurini and the Paracaná," experienced first, successive conflicts and slaughters, organized by the railroad employees..." (Ribeiro 1979:188). Finally, the now defunct SPI (Indians Protection Service) "protected them". In 1958 they were settled on a post, "one year later, 50 had died of the flu and the remainder returned to the forest" (Ribeiro, 1979:189). They tried new contacts. Thirty four Indians remained in the post, 10 living among the civilized and 14 isolated in the woods, thus practically extinct.

The Tocantins Railroad connects Tucuruí to Jacundá. It was started in 1927, with the objective of encouraging the pioneer frontier into the area where the rubber and Brazil nut trees were found. By 1962, the Assurini

of Tocantins were reduced to 35 people. From 1927, until the more regular contacts of 1953, several conflicts took place, 1928-30-33-37-45-48-49 (CEDI,1985:3)

In 1956, disgusted by the SPI actions, the Indians abandoned the Post and returned to the forest. Contact was resumed in 1962, after many epidemics and internal dissensions. They were reunited in one village, in the indigenous area of Trocara, and by then, the Assurini of Pajara, had lost their lands. The Paracana, as will be shown further on, were again hurt by the Transamazônica Highway.

Rodovia Trans-Cametá PA-156 (Trans-Cametá Highway), an extension of BR-153

The Assurini who survived the expansion caused by the Tocantins Railroad, had their lands demarcated in 1977, and ratified in the Carajás Project in 1982. Despite these measures, the area was cut in half by a strip of 9 kilometres, reducing their area to 21.722 hectares. This was caused by a still unpaved road, which connects Tucuruí to Cametá. This road separated their village and the FUNAI Post from the tribe's forest reserve "the last virgin forest of any significance in the region" The road works as an invasion corridor, circled by cattle raising ranches, which do not respect FUNAI's demarcation. This forest is coveted by hunters, gatherers, trappers, "gateiros" (middlemen for cheap labour) who use the road as an entrance. This allows the rapid impoverishment of the local fauna", and "no indemnity has been paid, to this date, to the Assurini, for the construction of the Trans-Cametá" The Indians would like the creation of a new route for the road, avoiding the indigenous area (CEDI-8, 1985-14).

They have also threatened to explode the bridge that connects Cametá to Tucuruí, if they are not indemnified. Finally, the Governor promised to compensate them to avoid confrontation, but did not reveal the amount. He only said that the Secretary of Transport had signed an agreement with the Indians (O Liberal (PA) 9/26/1990).

Transamazônica Highway

In a previous survey, made by FUNAI, it was believed that 29 indigenous groups lived in the area affected by the Transamazônica Highway. It is known now, that there were many more. No study has been consistently conclusive about the interference of this highway network in the Indians' way of life, neither before, during or after its construction. The then President of FUNAI, General Osmar Jeronimo Bandeira de Mello, conceded that 90% of the Indians involved were isolated, had no contact with the national culture and he calculated that they were only 2.800, obviously an underestimation when we see the

great network of highways which includes BR-230, BR-404, BR-317 and BR-364, (Ianni, 1979:183) (Moraes and others, 1970:89)

The Transamazônica Highway was the beginning of a policy adopted by the military regime for the occupation of the Amazon, in an attempt to solve the agrarian conflicts in the southeast and the poverty in the northeast, through internal migration. Ex-President Emilio Garrastazu Medici intended to "lead men without land to a land without men", forgetting the Indians and the first migrants, the rubber tappers and the river populations. The enterprise which started in 1970, received funding from USAID -US Agency for International Development. "From 1968 to 1972, for example, DNER received a total of US\$ 400 million in loans from BID and the World Bank. This was the biggest loan granted by the World Bank, to any country, for road building, and it was a decisive factor for the fast growth of the Brazilian Highways network". (Davis, 1978:91) As to the Indians, General Costa Cavalcanti, then Minister of Internal Affairs, defined their place: "We shall take care of the Indians, however, we shall not permit that they obstruct the advance of progress" (Ianni 1979:204).

The effect of the Transamazônica Highway on the Indians is better known from a stretch of the BR-230, from Marabá to Itaituba, due to anthropologists who made recommendations to the Carajás Project. On this stretch, the road resulted in territory loss for the Gavião, Suruí, Parakanã, Assurini, Arara, Xambioá, Xicrin groups, and extended the colonizing front towards the Kaiapo, Koatinemo, Arawete, Mekranotire and Munduruku. That is, in practically all the areas in the south of Pará. (Berta Ribeiro, 1983:78). The road interfered directly or indirectly, as in the case of PA-279, which affected the Xicrin.

The "arridos", so called by colonialism, are autonomous, isolated groups who refuse contact. These were hurt the most by the road and by the invasion that colonizing brings. Berta Ribeiro tells what occurred with "a probably Karib group, close to km.75 of the Transamazonia (about 100 km. from Altamira) "Some remaining Arara Indians were attracted by FUNAI. The settlers who occupied the lands along the road in the early seventies took over their papaya, banana and manioc plantations, from which the Indians had been banished". (1983:81/82)

And it goes on, "The Arara resisted contact as much as they could. They hid their planted fields, and their homes. They worked at night not to be seen or heard, alerted by past and recent experience to what they could expect from whites. Once more the charming of "arridos" or hostile groups, is processed without any previous demarcation of territory. That is, without care for the legitimate rights of its primitive inhabitants and without regard to the historic experience of decimation by epidemics and to social and cultural disintegration". Today there are still Arara groups isolated in the region.

BR-230 - Itaituba - Humaitá - Lábrea (Transamazônica)

BR-319- Porto Velho - Manaus

From Porto Velho to Manaus, from Porto Velho to Itaituba these roads, also begun in the early seventies, caused serious consequences to the Indians of the Madeira and Tapajós rivers and opened a colonizing front towards the Juruá and Purus rivers. They get practically no assistance from FUNAI, although they depend on the regional administration in Porto Velho. They have no health workers and their lands are not demarcated. It is obvious that the usurpation of these lands was aggravated by the paving of BR-364, which made communications easier from the Amazon to the large centres in the southeast of Brazil, through Porto Velho.

The Transamazônica Highway, in the Humaitá/Jacareacanga section (BR-230), simply crossed the middle of a Tenharin village at Km.124. The Tenharim continue without any guarantee over their lands, which were completely invaded.

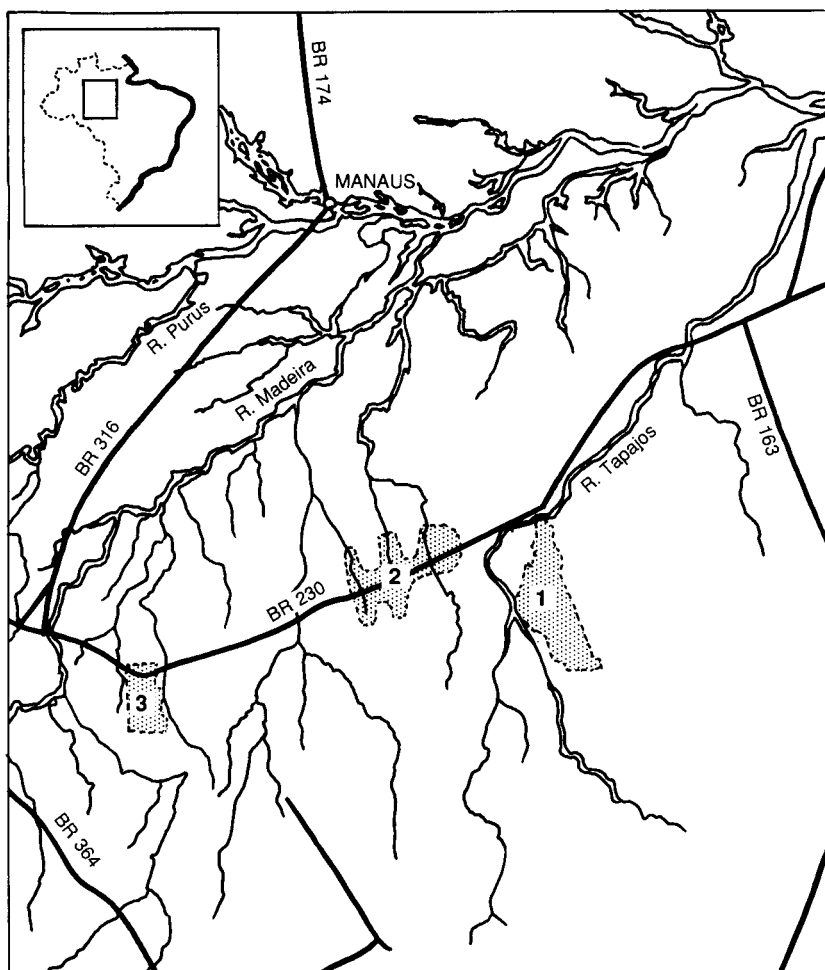
The group from the Igarapé Preto has been co-habiting with enormous craters caused by the Mibrel-Taboca-Paranapanema Mining Company, and FUNAI itself and the Indians had to ask permission to enter their own lands.

The Parintintin are scattered on the banks of the Madeira, from Humaitá to Porto Velho with no guarantees or medical assistance. The same is the situation of hundreds of Diaho, Tikuna, Cocama, Djapa, Apurina and Mundurucu (Miguel Menendez, Ezequias Heringer Filho and Ana Lange) (CEDI-1984)

The Parakanã - Tocantins Railroad, Tocantins Highway and Transamazônica

The Parakanã were particularly victimized by the great projects south of Pará. First came the Tocantins Railroad, then the Tocantins Highway and the Transamazônica and afterwards, the Carajás Project and the Tucuruí Hydroelectric Plant. Since 1928, the SPI tried to contact them due, to the Tocantins Railroad construction. The Indians, disenchanted again, disappeared into the forest. According to "indigenista", (a specialist in Indian affairs) Benamour Brandão Fontes, around one hundred Indians made contact on three occasions in 1953. This time the contact was prompted by the Tocantins Highway (Davis, 1978:93). About fifty died of the flu, as a result of these contacts. The others went back to the forest. In 1970, because of the Transamazônica Highway, FUNAI tried another contact. Forty more Indians died of the flu.

"Shelton Davis relates that; a Brazilian, Doctor Antonio Medeiros, visited a Parakanã village, at 48km. from the Transamazônica Highway. He found "a picture of promiscuity" among Indians and outsiders. In his



The Trans-Amazonian highway, along its stretch across the southern part of the Amazons, passes through the territories of the Munduruku (1), Tenharim (2) and Diahoi, Tikuna, Cocama, Djapa, Apupina, Apiaka and Munduruku (3)

medical investigations he discovered that thirty five Indian women and two FUNAI agents had venereal diseases, that eight children had been born blind and at least six had died of dysentery. To make things worse, in February, 1972, another flu epidemic attacked the Parakanã tribe.

A remarkable episode connected to the Transamazônica, was the resignation of "indigenista" Antonio Cotrim Soares (Davis, 1978:95). In an

interview Cotrim tells that he was sent to a pioneer front in Para and that a flu epidemic, brought by a visiting missionary, had developed in the Javari tribe. Cotrim told that he had sent an urgent message to the FUNAI headquarters, asking for medical supplies. These arrived forty eight days later, when twenty six of tribe had already died. Also, according to Davis, he said: "I'm tired of being a grave-digger for Indians", "I don't intend to contribute to the enrichment of economic groups at the cost of the extinction of primitive cultures".

Afterwards, the Parakanã were observed by anthropologist Antonio Carlos Magalhães in the framework of the Carajás Project and the construction of the Tucuruí Hydroelectric power plant.(CEDI-8, 1985;18 to 51) In 1983, three Parakanã groups finally surrendered to FUNAI at the Bacara river, and it's tributaries the Bom Jardim and the Paracajazinho. In 1977 they had been attacked by the Xicrim, sixteen were killed and nine made prisoners. According to Magalhães, the Parakanã were moved several times, against their better interest, prompted by FUNAI employees. Nowadays, there are about three hundred and fifty survivors. Their lands have been demarcated several times. They were cut off from their land by the Tucuruí Power plant lake and the road. In the famous Capemi scandal in which the military government financed a non-existent enterprise, their lands were offered for deforestation. With the Carajás Project, they had their lands partially demarcated, but until now, the deed has not been registered.

According to Magalhães, the Parakanã were moved fifteen times, building new villages in different places. An example of the burden brought by the Transamazônica: "In 1981, the Parakanã reserve showed a corridor, fifteen meters wide and six kilometres long, which was completely levelled, close to the Lontra Village. The Indians were forced to abandon the site.

OP-2. A branch of the Transamazônica Highway

This branch,"was built hurriedly by the Army in 1972, to help the movements of troops and materials to combat the guerrillas in Araguaia. In 1981, to serve the political interests of Major Sebastião Moura also known as" Major Curio". BEC started to enlarge the branch and between 1980 and 1983, a "mix", a combination of truck and bus, travelled daily on OP-2 and the Suruí Indians could travel free of charge". "Since 1983 commercial bus lines crossed the Suruí - PI- Sororo area daily, between Marabá - São Geraldo do Araguaia" (CEDI-8, 1985:101). There is no doubt that it would have been relatively easy to link Marabá to São Geraldo while avoiding the Indians area.

PA-279 - Redenção-São Felix

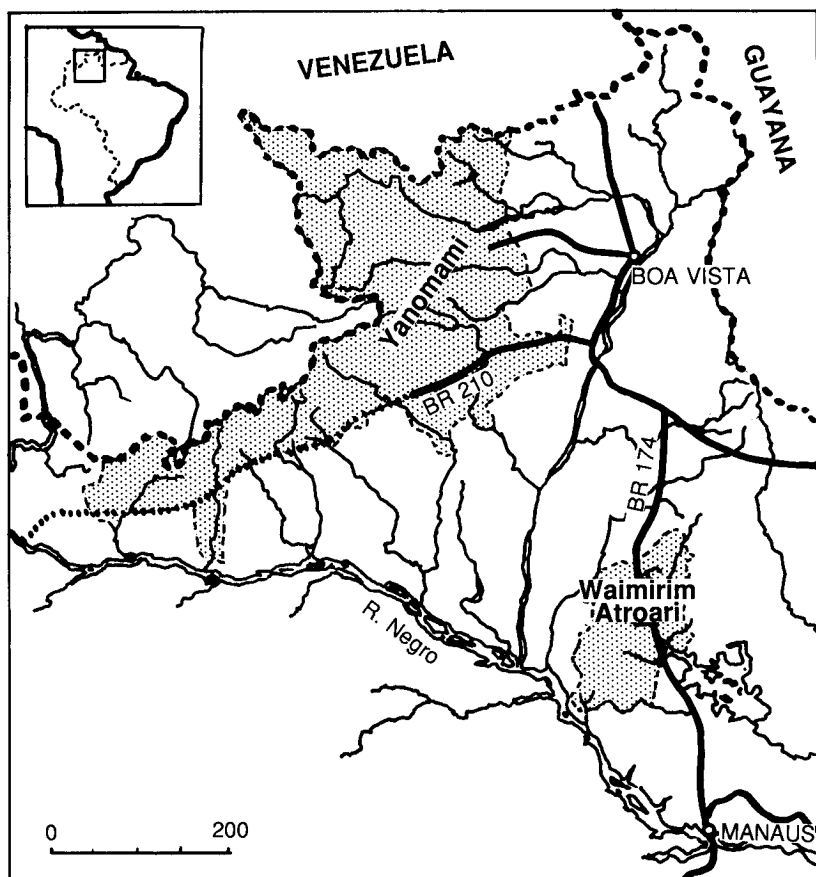
"In November, 1976, Dr. João Paulo Botelho de Souza (Medical doctor - EPM) and Lux Vidal (anthropologist-USP) sent a letter to the president of FUNAI stressing the urgency of demarcation, since road PA-279 was being opened in the direction of the Xicrim territory. In early December, FUNAI president General Ismarth Araujo de Oliveira answered, in a personal interview with Lux that essentially, the limits proposed by the Xicrim would be respected, however, the Minister of Internal Affairs had imposed an unnegotiable condition, the road as the southern limit. This way, the Xicrim would lose the source of the rivers Catete and Pium Grande. FUNAI also suggested waiting until PA-279 was completed to set the limits" (CEDI, 1985:141)

The demarcation was started and suspended, due to the indeterminate nature of the road design. The Indians lost 13 thousand hectares. "In an objection that Prof. L. Vidal makes about the east limit in the demarcation, it is localized between marks M4 and M3, and according to her the correct limit should be the crossing of Pium river and PA-279, and this was not done. The detour was made due to the existence of a village, Agua Azul, which appeared "spontaneously" at the time of the road construction" (CEDI-8, 1985:142).

In conclusion: "Since 1982, it is observed that GETAT has settled colonizers between highway PA-279 and the southern limit of -Catete (Xicrim) Indian Area. When GETAT disposed of Indian lands for colonizing settlements, the result was an incentive to illegal appropriation, trespassing and forest devastation, opening of various trails which characterize the action of the innumerable real estate properties round the limits of the Indian area. Among them, stands out Fazenda Grã-Reata which trespasses the Indian area, trying to increase their immense domains. It is the gravest case of invasion and the alleged owners are involved in angry conflicts with the Indians. (CEDI-8, 1985:139).

BR-174 - Cáceres - Manaus - Caracaraí - Boa Vista

This road is the main access to Perimetral Norte and it cut in half the Waimiri/Atroari and the territories of other isolated groups. The Atroari and Waimiri were six thousand in 1905. Submitted to various massacres and epidemics, they were reduced to three thousand by 1968, at the time of the road construction. Today, there are about four hundred survivors. These Indians were particularly hated by the people of the region, accused of being an obstacle to the communication between Manaus and Boa Vista. From 1946 until the contact, the Indians had killed sixty two SPI and FUNAI employees who had entered their lands.



The passage of BR-174 through the Waimiri/Atroari lands, as well as their pacification constitutes a real internal, colonial war. The Army was settled in the surrounding area, with the 6th BEC, in the framework of PIN (National Integration Plan). The road is still today a real danger to the Indians, particularly to those still isolated at the northeast, northwest and south of the area. In 1986, some specialists proposed to re-build the road, avoiding their lands, as part of the indemnity owed them for the construction of the Balbina Hydro-electric power plant, which was already completed. It is common to see their women asking truck drivers for cigarettes and biscuits. Dozens of them have died of diseases caught in these contacts.

"Indigenist" Porfirio de Carvalho wrote about the saga of the contact of these Indians, remembering the effects of the road. (1982:61/84) The contact was hurried to permit its construction. The first provisional

contact was in 1883, another in 1928, however, the vegetation covered those trails. Only in the seventies was it completely built, after various conflicts with the Indians. Many "indigenistas" died attempting pacification, such as Father Giovanni Calleri and "indigenista" Gilberto Pinto.

Since 1971, various decrees have reduced the Waimiri/Atroari lands, partly released to Mineração Taboca S.A., a subsidiary of Paranapanema Group, which built an access road to BR-174, crossing the remaining Waimiri/Atroari area. This mining company has now got 31% of the Indians' lands and is expanding their influence over the isolated Indians and the area itself which is still prohibited to themd.

"BR-174," reports Edilson Martins "cuts the Indian territory near Km.209 at the border line with the River Abonari, by an extension of 120Km. in a straight line (1981:155). It is clear that the difficulties were not few, since there were villages in the area. In one, close to Km.270,, pots, pans, ceramics and remnants of bows and arrows were found during the road opening and earth-work".

Carmen Junqueira and Eunice Paiva describe the situation: " The Waimiri/Atroari reservation was created in 1971, with 1.611.900 hectares, which meant a reduction of 75% of the traditional territory, thus releasing it for the construction of BR-174. This way many villages were cut off from the reservation. Other Presidential decrees protected three areas, a total of 704.900 hectares. Finally, in 1981, Decree 86.630 revoked all the previous legal instruments concerning these lands, taking back 31% of the area formerly reserved, making the remainder of the reservation and the three protected areas into temporarily interdicted areas, thus opening for mining and the building of the Balbina hydro-electric power plant" (1985:27). This shows how a road makes way for mining, colonizing projects and hydro-electric power plants.

FUNAI's performance in the Waimiri/Atroari area was told by "indigenista" José Apoena Soares de Meirelles for the seminar "Opinion": "The Waimiri/Atroari fell in the silence of the forest , subtly buried and forgotten in space and time". And further: "Nowadays we go on missions of peace and friendship to the Indians, but truly, we are working as a spear-head for big business and economic groups who will settle in the area. It is difficult for the Indians to believe in peace missions, if what follows us is the likelihood of ecological destruction" (Rio de Janeiro, 01/17/1975).

Carvalho has been following up the situation of these groups, as coordinator of a program sponsored by Eletronorte, as part of the compensation for the construction of Balbina. The 6th BEC is still creating problems. In 1987, for example, to make an embankment for an access ramp to a bridge over the river Taquari, by Andrade Gutierrez Construction Company, the military mobilized tractors, which worked

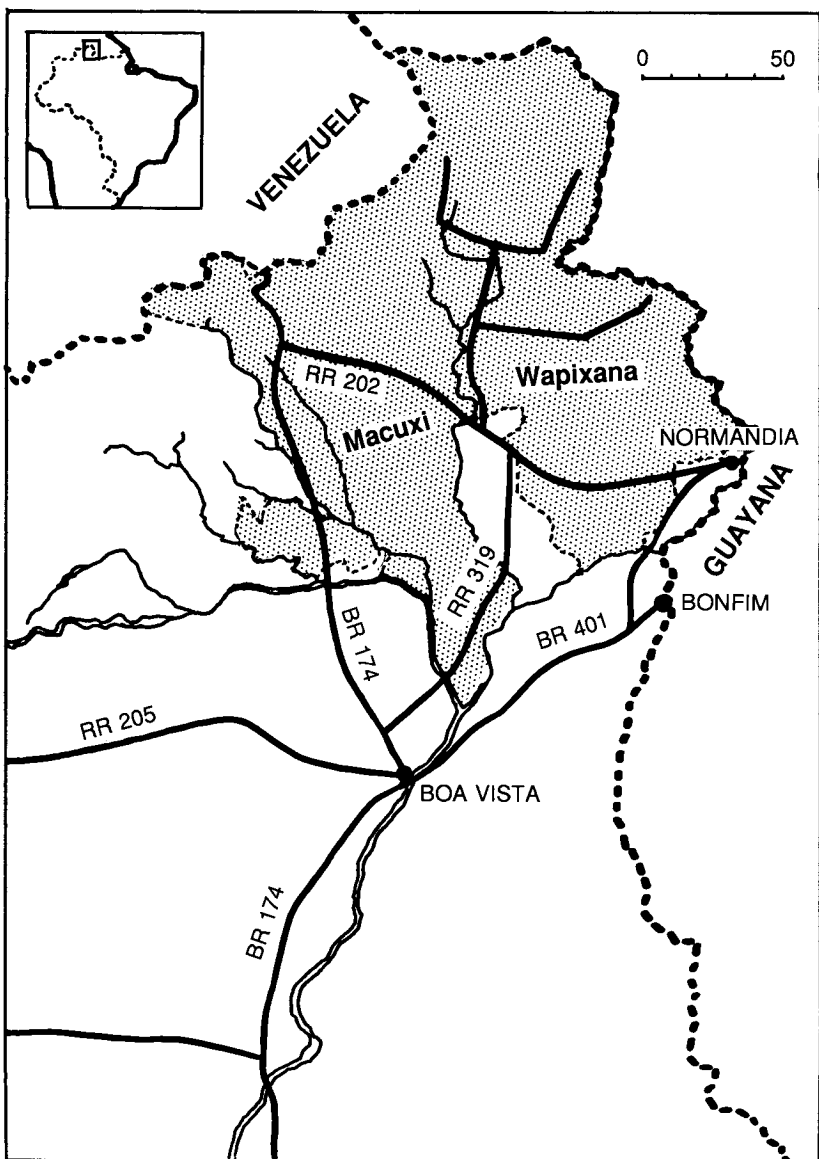
until night, with no consideration for the Indians, almost running over children, disturbing them day and night, making holes to remove earth at the side of the village, (1987:7/8). He reported that, according to estimates by a technician, the floods caused by the road, with soil filling the rivers and igarapés, are even bigger than the inundation caused by Balbina, which was also allowed by the road. Every year there are floods along the road embankments, which were not built to provide proper drainage.

The road also made way for a branch that gave the Paranapanema Group an access to the river Pitinga, the largest open air cassiterite mine in the world, which actually belongs to the Indians. The branch that crosses the Indian lands is controlled by the mining company, which continually interferes in the tribe's life, disarming the Indians and trying to corrupt them to increase the extraction area, offering ridiculous amounts as compensation". This branch was once prohibited by a jurisdiction from Brasília. The mineral pollution is exterminating the fish, which are the Indians' main protein source," (Rodrigo de Azevedo Lima, responsible for environment in the program (Jornal da Ciencia Hoje 10/19/1990).

During the rains of 1985, nine decantation dams burst, polluting almost 50% of the Indians water, close to the river Alalau. The mining company has not been observing the legislation which imposes that they recover the damaged areas, and forbids mining on Indian lands, without their consent and with the approval of the National Congress. Nonetheless, the mining company has been able to avoid paying fines and filling in the craters they have spread throughout more than 300 thousand hectares. This shows how the effects of roads on the Indians are diversified and how they multiply, as other projects follow, and are practically permanent.

BR-210 Perimetral Norte (Macapá - Mitu, Colombia)

The Yanomami, about nine thousand Indians, in the State of Roraima (formerly Territory of Roraima) where, until recently, most of the population was indigenous, have had their survival put at risk. "Since 1974, primarily caused by the construction of BR-210, the Perimetral Norte, which cuts the south of their territory by an section of 225 Km. A few years later, thirteen villages were reduced to eight small family units which moved around along the highway, while other groups were hit by two measles epidemics, suffering drastic reductions. In 1975, gold miners started to invade the Surucucus mountain range, provoking conflicts with the Indians and spreading the flu, measles and venereal diseases" (Junqueira C. and Paiva E, 1985:28).



The Yanomami Park was interdicted at one point and then broken up into "islands", it is not yet demarcated and is threatened by the expanding frontier, gold miners and mining companies. There is a strong resistance in some military sectors, which allege fancifully, that it is a

National Security issue, because it is a frontier area. Various governments, including the present, have been postponing a definition of the Indians lands and the removal of the gold miners

BR-163 Campo Grande - Cuiabá - Santarém - Suriname

The Kreen-Akarore lived in the Cachimbo forests, where, the Cachimbo Air Force Base was installed in the 1960's. Since the 1950's, the brothers Claudio and Orlando Villas Boas had flown over eight Kreen-Akarore villages. Apparently a small group of them visited the Air Base. Although they were pacific, left presents and were accompanied by their women and children, "the presence of Indians caused a wave of hysteria among the Base's military personnel and a squadron flew over the forest searching for the tribe" (Davis 1978:96).

"The Villas-Boas brothers, the well known founders of the Xingu Park, were quite reluctant to contact these Indians. In 1968, they agreed to make an expedition, which failed for lack of funds, and the Indians moved further on into the interior of the Cachimbo forest" (Davis, 1978:97).

"The construction of the Santarém-Cuiabá highway gave the final impulse for contacting the Kreen-Akarore", reports Shelton Davis. The Villas -Boas tried to find them in 1971 and 1972, with great expectations from the international press. The Indians surrendered in February 1973. The Villas-Boas brothers warned, in a collective press interview that a crime was about to be committed, in case an Indian reservation was not provided for the recently contacted tribe. A reservation was demarcated, but not in the tribe's traditional territory. FUNAI employees led the Indians, like beggars, to the Cuiabá-Santarém Highway. In one year, from 300, they were reduced to 135, today they are 83 (CEDI - Aconteceu, 1984:245)

Although they were against this solution, in the face of such a situation, the Villas-Boas chose to remove the surviving Kreen-Akarore to the Xingu National Park where " they are living side by side with their traditional enemies, the Txukahamãe" (Davis 1978:101). It is hard to say which would have been the best solution, since the chance for demarcation of their lands was remote, due to FUNAI's inertia.

PA-70 or PA-332 and the Estrada de Ferro Carajás - Ponta de Madeira

The Gavião (Parkatêgê) Indians from Pará were particularly hurt by roads. Their situation has been followed by anthropologist Iara Ferraz. It is worth quoting some passages: "The Mãe Maria Stream, which rises in the interior of the indigenous area, originated the name of a SPI Post installed in 1964 at the edge of a narrow trail, which, three years later would become a State Highway, the first in the region : PA-70, as it is

locally known, although it is, actually, PA-332 (since 1982). This highway was the first connection from the town of Marabá to the Belém-Brasília Highway (BR-010), before the Transamazônica. In 1967, it cut in all its entirety - about 22 Km., north to south, the immense Brazil nut forest that was the Gavião territory" CEDI-8-1985:53 to 98).

And she adds: "In 1977, the area's southeastern limit was damaged by the construction of another highway. PA-150, which starts in Morada Nova at Km. 12 of PA-70 and runs towards Castanhal, a town close to Belém. The building of these two roads accelerated the real and disorganized occupation of that eastern part of the Amazon, allowing the constant and growing invasion of the Gavião territory, by squatters as well as by the infra-structure of State projects which would be installed in the region. Later, the Indian area was also crossed over by the power transmission line of Eletronorte, originating from the Tucuruí Hydroelectric Power Plant, and in 1982 by the Carajás - Ponta de Madeira Railway, which crossed decisively the Gavião territory.

The road caused the unification of the Gavião in one group and made them lose the territories they had formerly occupied. This was the case of the "Maranhão People": "In the late 1960's the opening of highway PA-70, not only brought along its route the squatters, the land-grabbers and the cattle raising front, which had rapidly advanced into the region, but ended up confining, under terrible pressure, one group which had taken refuge in the State of Maranhão, in a place known as Igarapé dos Frades, in Saranjal, close to Imperatriz. By the end of 1968, the area in which the "Maranhão People" had settled - close to PA-70, but 150 kilometres away from Mãe Maria, had been interdicted by decree (63.515 of 10/31/1968). However, this measure was not respected by the pioneer population. The Indians reacted violently and there were deaths on both sides, which brought panic to all the region (O Estado de São Paulo-5/30/1972)".

The "Maranhão People" were transferred to the Mãe Maria Indigenous Area. Struck by diseases, they were moved back to the reservation in 1979. In 1980 there were negotiations with Eletronorte for the passage of a power transmission line from the Tucuruí Plant to the Interconnected North-North-East System.. In the same year, another negotiation took place; with the Companhia Vale do Rio Doce (CVRD), for the construction of the Carajás Railroad.

The negotiation about indemnity between CVRD, Eletronorte and the Gavião, shows the absolute lack of principles in the treatment given to the Indian issue. Article 198 of the Federal Constitution warrants the Indians full usufruct of their immemorial lands. Article 20 of Law 6001/73, opened a breach for projects of public interest, "exceptionally, if there is no other alternative solution" (Junqueira, C. and Paiva, E., 1985:15) No study was made for alternative solutions in this case.

Recently one of the CVRD executives conceded that the Carajás Railroad could have had another plan, avoiding the Gavião territory. And even worse, - although eminent jurists, such as Prof. Dalmo de Abreu Dallari recommended that the indemnity should be paid with land , CVRD deposited 3 billion cruzeiros in the name of the Gavião for the Railroad's right of passage. Not long ago FUNAI intended to withdraw the space occupied by the rails from the approved decree. The constitution declares that Indian lands are inalienable. The Gavião ended up losing the cash indemnity, seized by the government in one of the recent economic changes.

BR-316, Belem- Brasília, Para-Maranhão and Bragança Viseu (PA)

Anthropologist Virginia Valadão, describes how the Tembé Indians were robbed of their lands in the Alto Rio Guamá Indian Area: - "The neighbouring lands were being occupied by agriculture and cattle raising fronts, through BR-316, which reached the towns of Ourem, Viseu, Capitão Poço and Paragominas. The invasion of the indigenous area took much larger proportions with the encouragement of regional politicians and local authorities, including FUNAI" (CEDI, 1985:198)

And: "1974 - The invasions go on, mainly at Rio Tauari, the reservation's western border, where demarcation poles were pulled up. In an inquest by FUNAI, in cooperation with the Federal Police, it was found that the invasions were aggravated by the opening of peak by DER/PA, which crossed the reservations transversally, linking a place called Garrafão to BR-316 (São Luiz-Belem). Some DER/PA employees were exploiting wood at Vila Tanari. When asked about these irregularities, the DER/PA General Management informed that the pike services were part of the DER/PA State Highways Program for the 1973/74 term, and that the wood had been taken away by an order from the Governor of Para State".

BR-316 also crossed the Pindaré Indian Area, between Bacabal and Bom Jardim, in Maranhão, where close to 400 Indians lived (CEDI - Aconteceu, 1984:170)

BR-226 - São Domingos do Maranhão - Porto Franco

BR-226, between Grajaú and Barra do Corda, hit Morro Branco Indian Area, where 153 Guajajara live and cut their Area in half, where close to 3000 lived, creating great tension, since 3000 invaders built the Village of São Pedro dos Cacetes inside the area, with the help of the State government and of the Grajaú town administration.

BR-80 - Xavantina to Cachimbo (MT)

After many years and great effort, Claudio and Orlando Villas Boas were able to influence the National Congress to create the Parque Indígena do Xingu (Xingu Indigenous Park). After the military coup of 1964, FUNAI, created three years later, started to implement policies for the Indians, inspired by the military development model, the "National Integration Plan"(PIN). In 1971, FUNAI authorizes the construction of BR-80, which crosses 40 km. of the Xingu Park at its northern part, inhabited by the Txukahamãe (Davis,1978:85 to 88). A group led by chief Raoni and advised by the Villas Boas, moved south of the area at 8 Km. from the highway. Another Txukahamãe group, led by chief Krumari, moved north, at 120 Km. from a highway workers camp, according to anthropologist Gustaaf Verswijver.

In November, 1973, a measles epidemic reached the Krumari group. A month before, there were four dead and twenty others had their lives endangered, 70 Txukahamãe were taken to a hospital, where a doctor said he did not have the facilities to take care of them. At the end of the year another epidemic struck them. "This time the news was that the disease was transmitted by the field workers, who were clearing the land along both sides of the Xavantina - Cachimbo Highway, for cattle raising.(Shelton Davis, 1978:87).

In February and March 1984 the Indians from Xingu rebelled, retaining one of the BR-80 rafts and taking 3 of FUNAI's executives as hostages. They demanded a larger area in the northern side of the Xingu Park, claiming 500 square kilometres, exactly where about 80 large scale cattle farms were installed. The government alleged that there were no resources to change the BR-80 route, but that they would study the case. The Xingu National Park was finally ratified in 1991, after decades of discussions and the Indians were able to win back part of the lost northern territory but still await the demarcation of the Kaiapó Area, despite the efforts of Fundação Mata Virgem and of the singer Sting.

BR-070 Barra do Garças- Cuiabá and BR-364 from Jataí to Cuiabá

BR-70, connecting Goiânia to Cuiabá, had already created problems in the Bororo area because it crossed the Merure and Sangradouro Reservations. BR-364, in its unpaved stretch, which is actually a cattle road linking the northeast of São Paulo State, from Bebedouro to Jataí and Cuiabá in Mato Grosso, brought a great impact on the Bororo areas near Rondonópolis, in the Indian areas of Tereza Cristina, Tadarimana and Perigara.

The Bororo were not even able to keep a whole area. Their dispute for the lands goes back to the beginning of the century with the Rondon Mission. By the end of 1985 these lands were included in the

Polonoroeste Indian help program, but nothing was actually done. FUNAI's assistance is precarious. One example is, that a farm is actually installed in the middle of their lands.

Roads will always be a point of conflict. In 1985, the Mato Grosso State government tries to pave BR-70. The Bororo and Xavante Indians demand the regularization of their lands which were cut and invaded by the expansion caused by the highway. They also demand indemnity. They stop the highway traffic, and obtain some concessions and promises from the government, but nothing compared to what they have lost.

4. Roads: Invasion Corridors in Rondônia

Madeira Mamoré Railway Porto Velho-Guajará-Mirim

First the Indians were slowly expelled from the large rivers, such as the Madeira, Mamoré and Guaporé. The Spanish and Portuguese colonizers have used the rivers to extract minerals since the XVII century, therefore the Indians lost the sides of these rivers, which were transformed and made valuable as routes of fluvial commerce. At the end of the last century, came the rubber latex extraction and the Indians were again pushed away, from the smaller rivers, to their sources, and then came the dispute for the tributaries.

However, none of these facts have been as fatal to the Indians as the building of roads. Starting from the Madeira-Mamoré Railroad, which had to confront them at each kilometre. The Railroad has never functioned fully since the first attempts to build it in 1874 and 1878, until its actual opening between 1908 and 1911. In 1931 it was abandoned by the company which administered it and later was re-opened by the government. There were dozens of telegrams from the SPI about Indians attacking the Railroad until it was abandoned in 1977. Today, it is reduced to a short line for tourism.

At least one Indian group was wiped out, the Karipuna, of the Pano language, not to be confused with the ones that FUNAI called Karipuna, of Tupi-Kawahiwa language, which were contacted in 1976 in the Jaci-Paraná (Rodrigues, 1984). The MMR was attacked at practically every kilometre by different groups: The Orouari (called Pakaa Nova), of the Chapakura language, the Arikem/Karitiana and the Tupi-Kawahiwa groups.

The road and the colonization it helped to expand, brought great harm to the Indians from the rivers Mamoré, Jaci-Paraná and Mutum-Paraná. The ones that made contact with the SPI in the first half of the century have all been exterminated; the Arara (Tupi-Kawahiwa) from the Mutum-Paraná and the Capivari. The road labourers even exhibited captured Indians in Porto Velho (Cultural Survival, 1981:41)

In the 1940's, the Indian attacks increased, probably by the Kawahiwa and Orouari, who only surrendered in the 1960's. The Kawahiwa surrendered much later, when the railroad was already inactive. The so-called, Karipuna (Kawahiwa) from the Jaci-Paraná, also surrendered in 1976, and the Uru Eu Wau Wau, in 1980. FUNAI had contacted about 400 Indians from several groups up to 1983; the Djai, Mondawa and Canindé, which are now reduced to about 100, not counting the groups which have not yet been contacted, such as the Jurureí.

From the very start, the Madeira-Mamoré Railroad labourers, used the "tame" Indians as support to advance into the forests and were afraid of the ones who resisted. One of the engineers describes the terror in which they lived: "The risk of being killed and roasted was too great in comparison to the crumbs of rubber the extractors were able to gather". And: "In fact, it was not possible to effectively protect ourselves from the savages who knew the advantage they had, when they furtively approached and when close, used their silent weapons".

And further: "It would not be surprising that the constant danger, with which we lived, would generate panic among us, but the many hardships and tortures that marked our every day life in the Jaci-Paraná, worried our spirit and kept us from thinking about what possible suffering that the future might have reserved for us. However, there were times when strange noises made us jump out of our hammocks at night, or during our restless sleep, when we imagined we heard the savages barbarian music, played with instruments made with our own bones" (Craig, 1947).

The Indians were hurt by the road in every way. Firstly, it crossed their lands. While the ones that had not been contacted resisted and counter-attacked, the "tame" ones served as guides in the forest and as temporary labour. The few areas that were later reserved for the Indians were invaded or were transformed into wood suppliers, using the "pacified" Indians as labourers. Each attempt to make the Railroad work, started new conflicts with the Indians.

BR-29 Vilhena - Ariquemes - Jamari

The Cuiabá - Porto Velho - Rio Branco, was a true disaster for the Indians. Included in the Highways Plan, it was approved by the National Congress in 1946. The opening of this road had been tried since 1943, with the Army's help. This had been a long time ambition of the colonizers since the waterfalls of the Mamoré and Madeira rivers hampered the territory's occupation via the rivers. This was the reason, in the beginning of the century, for the construction of the Madeira-Mamoré Railroad, this eagerly desired railroad which would link Brazil with Bolivia.

When the Amazon rubber again became valuable, during World War II, there was a new attempt to build BR-29, the road which would substitute the railroad in the direction of Peru, through Acre. Two military engineering units were detached for this purpose, one departing from Cuiabá and another from Porto Velho. The first modern earth levelling machines arrived in the region after the war. Various attempts were left half finished. The Indians and the forest were the leading cause for the interruption of the enterprise, particularly with the disappearance of a young officer. The search operations brought epidemics to the Boca Preta and Negra, the Parintintin-Kawahiwa (now called Uru Eu Wau Wau) from the Jamari and Ji-Paraná rivers sources.

Nevertheless, a precarious trail was built from Porto Velho to São Pedro do Jamari and a track from there to Ariquemes. But the 141 kilometres were only passable, with difficulty, during the dry season and were almost abandoned.

In 1960, during the development summit of the Juscelino Kubitschek government, a new impulse was given to the opening of the Cuiabá-Porto Velho-Rio Branco linking road. It would be a replay of what happened in 1943-46, when the road penetration caused the death of the Boca-Preta Indians.

The road had been planned to follow the trails opened by the telegraph line that had been installed by the Rondon Commission in the beginning of the century, from which some Indians, who did not want contact, refused any approach. A new plan was made to shorten the road and other Indian groups were hurt along the way. The Kubitschek government effort was decisive, since it allowed the opening of a complementary reverse stretch, Vilhena-Ariquemes-São Pedro do Jamari.

The increased value of cassiterite added to the pressure lobby of the big construction companies which has determined the region's public policies in the last decades, particularly in the so called "great projects". This is the case of BR-29, the road that permitted the cassiterite mining in the Uru Eu Wau WAu territory, with serious consequences to follow, was inaugurated in January 1961. However, it is still only precariously passable, even during the dry season.

Foreign financing made its conclusion possible, allowing the permanent occupation of the interior of Rondônia. The first step was taken by a FAO commission, which visited the region in the second semester of 1963, and approved the road. (Leal, 1984:277). The FAO-UN officers were impressed by the potentiality of Rondônia for agriculture and cattle raising, not giving any thought to the quality of the soil or to the protection of Indians and the environment.

The approval of the FAO officers "influenced the decision of a loan granted by AID, in 1966, specifically for the construction of "works of art" to substitute the rafts and the wooden bridges between Cuiabá and Porto



The freeways force contact with the Uru Eu Wau Wau. How can a nation of hunters adapt to the novelties brought by the colonisators?

Velho", according to a declaration by Paulo Nunes Leal, armed forces officer and ex-governor of the Rondônia Territory.

The military described the precariousness of the road, before AID's loan:- The rivers were crossed by rafts. Where there were bridges, they were badly kept "making traffic really dangerous". Enclosed by the forest, except close to Porto Velho, the earth levelling was reduced to half by the growing vegetation. About twelve kilometres were never finished in the Muqui igarapé. Nature came to the defence of the isolated Jururei (Kawahiwa/Uru Eu Wau Wau), which Levi-Strauss had found in the 1930's and are still in the same place (1981:315).

The work was finished by the 5th Construction Engineering Battalion of the National Army, stationed in Rondônia. A report by a commission of the Armed Forces General Staff, which visited the projects in 1963, showed the traffic difficulties on BR-29, particularly near the Uru Eu Wau Wau (Leal, 1984:278).

BR-364 Cuiabá - Porto Velho

In the 1970's, the military regime gave a strategic impulse to the occupation of the Amazon, through the National Integration Plan. This was the time of the Transamazônica Highway, when development was mixed with theories of national security, favourable to the wide scale, effective and permanent occupation of the Western Amazon.

At once, in 1973, the DNER contracted seven of the Country's biggest construction companies, such as Camargo Correa, Mendes Jr., Constran, Odebrecht, to build BR-29 by stretches. With some modifications in the design its name was changed to BR-364, but it was the same Cuiabá - Porto Velho - Rio Branco road.

The impact of these roads on the environment and the Indians, there main victims, is now quite well known (Goodland and Irwin, 1975; Davis, 1978; Ianni, 1979; Moraes and others, 1970). The government technocracy insisted on the paving of BR-364, reasoning that it would permit the connection from the State of São Paulo and Brasília to Bolivia and Peru, and, through BR-319 and BR-174, to Manaus, Boa Vista and Venezuela.

The project was finally made possible by the Polonoroeste Program. The paving was presented by the Ministry of Transports, as the "dorsal spine of the most important Brazilian regional development program" (Leal, 1984:304).

The World Bank financed 1/3 of this program at a total cost of 1,5 billion dollars. About 800 million dollars were used primarily on the road, and the rest in an integrated development program, geared to colonization. Only 3% was reserved for environmental protection. As to the Indians, the Brazilian government, to avoid external interference,

promised to take measures with its own budget, which it obviously did not do.

In Septembér, 1984, President João Batista Figueiredo inaugurated the speedily paved 1,448 kilometres of BR-364, the stretch from Cuiabá to Porto Velho; the great work of his government. The truth however, was that the military government thought of Polonoroeste as an impelling force for the transformation of the Rondônia Territory into a State, thus increasing its Party's(PDS) representation in the indirect Electoral College with the view of electing Colonel Mario Andreazza, then Minister of Internal Affairs. His Ministry controlled Polonoroeste, which might eventually, help him to become President of the Republic, in a project of military continuity.

BR-364 was the first great paved highway in the Amazon. Other previous roads also brought grave consequences to the Indians and the environment, but they functioned precariously and only in the dry season. This one came to stay, as well as the colonization it has stimulated, in the areas where fertile soil was found. Even functioning partially in the 1970's, the then BR-29, attracted a population increase of 75.4%, from 116.620 to 503.125 (1980 census Anais-Sepplan-RO, 1984:7). The paved BR-364, in less than a decade, brought the population to 1.5 million, by the latest estimates.

BR-364 - Cuiabá - Vilhena Stretch **Paving with Subsequent Protection Measures**

In a region where the Indian groups had recently been contacted, practically none of the groups from the northwest of Mato Grosso was spared the impact of the BR-464 colonization, particularly after the paving was concluded in 1983. Although Polonoroeste provided for the indigenous component, FUNAI's inefficiency and the speed of the colonizing front, incited conflicts between the Indians and the migrants, from the very poor workers to the large agriculture and cattle raising companies, timber explorers and mining companies.

BR-364 simply cut the Nambiquara lands in half. The demarcation of their lands was hampered by the big agriculture companies which were installed in the area and today they are still threatened, although regulated by Polonoroeste. The Pareci also had their lands pulverized. A large family, living in shacks close to a gas station, was driven to prostitution and alcoholism, threatened on their own lands, in the Indian Area of Capitão Marcos, which were coveted by neighbours, although only small and not very productive. The Parecí of the Indian Area Formoso struggled with powerful economic groups such as the Itamaraty Farms and the Samello group, Sudamata Farm, which produces shoes. There were deaths of workers and Indians in the area. The Pareci Indian

Area has been invaded by about forty farms and was crossed by a regional road.

Although the Rikbaktsa lands were not cut, they were hurt by the occupation, being confronted with the Cotriguaçu, an economic group which holds more than a million hectares in the north of Mato Grosso. In 1985, led by FUNAI and by an anthropologist, 47 military police invaded the Japuira area, dragging the Indians with ropes, disarming them and burning their plantations and huts (Arruda, 1986:318).

Wherever the BR-29 passed, from its opening, until its paving, it created difficulty for the Indians, mainly due to the development impulse that it represented. The Enauenê-nauê continue to dispute the demarcation of their lands, which coincide with part of the Ique Ecological Station. While IBAMA/ex-Sema prolongs bureaucratic misunderstandings in Brasília, the recently contacted, Enauenê-nauê, have resisted invasions from colonizers, surveyors, agriculture companies, with a death toll of 10. Recently, the Indians were preparing to demarcate their own lands, opening a trail by their own means.

The Communities of the Apiaká and Kayabi Indian Areas engaged in a war against a CEMAT attempt to install a power plant on a waterfall they consider sacred. The BR-364 impact which, in the beginning was calculated to comprise a strip of about 100 kilometres along the highway, ended up reaching "withdrawn groups in the north of Mato Grosso and in the south of Amazonas, particularly in the Aripuanã municipal jurisdiction, at 1000 kilometres from the highway, through its branches and the colonization projects it permitted." (FIPE, 1983 to 1987).

BR-364 and the Aripuanã Park

The construction of the Cuiabá-Porto Velho highway was started during the Juscelino Kubitschek government (1956-60), it is the origin of dozens of confrontations between Indians and whites in the basins of the rivers Machado, Roosevelt, Aripuanã and others. The press can act as witness to a long list of Indian attacks and of the punitive expeditions organized by gold miners, mining companies, rubber extraction, cattle and agriculture companies. The most notorious of these massacres took place in 1961 at Parallel 11, when the Cinta-Larga village was bombarded by airplane, by order of the firm Arruda and Junqueira. Later the survivors were killed with terrible cruelty.

Overflying the region several times, it was possible to localize the Suruí, Cinta-Larga and Zoró villages, helped by information from the Gavião (Icolei) and Arara (Karo), who maintained contact with FUNAI in Rio Machado or Ji-Paraná in Rondônia. In 1978, the then President, General Ernesto Giesel, interdicted the Aripuanã Park, which included the known villages of the Tupi-Monde groups, at the limit of the then

Federal Territory of Rondônia and the State of Mato Grosso. The pressure of economic groups made the President divide the Aripuanã Park in two parts, separating the Lourdes Indian Area, where the Gavião (Icolei) and the Arara (Karo) lived, in Rondônia, isolating them from the other groups of language affinity; the Zoró, Suruí and Cinta Larga. A great number of large scale farms were installed between the Lourdes and the Zoró Indian Areas, mainly the Catuba and Castanhal Farms.

Not withstanding the evident Indian presence in the area and the President's interdiction decree, a private colonizing company, the Iporanga, parcelled a great part of the Suruí and Cinta Larga lands. The colonizers pressure increased the dissensions among the Indians themselves, with the Suruí fighting the Zoró and their allies Gavião (Icolei). After many deaths among the Indians and the settlers, the Sete de Setembro Indian Area destined to the Suruí, was demarcated at the limits of Rondônia and Mato Grosso and the invaders were reinstated by the Iporanga company.

The Cinta Larga lands of the Aripuanã Park were only regularized with the Polonoroeste Program, after BR-364 was paved. The Cinta Larga, Suruí and Zoró had only been contacted in the 1970's. More than 300 gold miners were removed from the Cinta Larga lands (Indian Area Rio Preto), but they returned, having bribed some FUNAI employees. In the Roosevelt Indian Area of the Cinta Larga, the Indians took the task upon themselves and ousted a group of invading farmers, who had built a road from the Espigão do Oeste.

The same road, continuing toward Mato Grosso, was built in 1976 by the Condominium Lunardelli, associated with bankers interests, such as the now defunct Sul Brasileiro, tried to separate the Cinta Larga from the Zoró, with the complicity of the military which, at the time, controlled FUNAI. A lobby of cattle raisers from the Espigão do Oeste, in connection with Rondônia politicians, succeeded in dividing the Zoró Indian Area into lots through Intermat, (an agrarian division of the Mato Grosso State). Intending to legalize the occupation, they transferred 61 landless families to the road side, crossing the Indian Area, near the 14 de Abril and Tiroteio rivers. A mining company and several wood extraction enterprises operate quite freely, with occasional confrontations with the Indians

In 1986, 3000 tree trunks, cut by Madeireira Rosseti were apprehended in the Roosevelt Indian Area. One of the invading logging enterprises, the Varsovia, with headquarters in São Paulo and managed by an ex Army Colonel, got access to negotiate directly with the Indians, helped by a FUNAI top officer. Initially, the proposals were refused by the Indians and by the Park's employees, however, the deforestation won, due to FUNAI's inefficiency and IBAMA's omission, although Indian Areas are considered of permanent preservation, guaranteeing the

Indians' usufruct. Today the logging enterprises are many and devastation is generalized. Young Indian leaders are now involved in the business.

The regularization and protection of the Aripuanã Park Indian lands, of the withdrawn groups of Madeirinha river and of those in the north of Aripuanã, are grave problems, still unsolved by the Polonoroeste, as is the removal of the invaders from the Zoró Indian Area. Each time that the agrarian agency receives funds to resettle the invaders, they find a way of postponing it. When a survey identified 150 invaders, the government of Mato Grosso said they were 1500, trying to make the removal impossible.

This enclave started an invasion chain. The Federal Supreme Court found the road illegal, but it has not been interdicted. The Cinta Larga are faced with a second mining enterprise which is illegally exploring in the Aripuanã Park and there are gold miners in Serra Morena. (Junqueira and Mindlin, 1987:31)

The so called "withdrawn" groups are always the major victims, because they are self sufficient, isolated, without contact. The roads have always accelerated "pacification", aggravating the conflicts. The Cinta Larga killed isolated Indians known as "baixinhos" (shorties), probably Kawahiwa. Another case is of a River Madeirinha group, between the Zoró and Gavião, whose lands are being occupied by agricultural and cattle raising companies. An Indian girl of this group, who did not speak Portuguese, served as a prostitute to five field hands. These isolated groups are still threatened.

BR-364 and the Gavião and Arara of the Lourdes Indian Area

The Lourdes Indian Area of the Gavião (Icolei) and Arara (Karo), besides having being isolated from the Aripuanã Park, thus losing 300.000 hectares to farmers, and although demarcated in 1975, is an example of the consequences of the increased value of Indian lands close to the roads. Lourdes I.A. ended up at 50 kilometres from BR-364 and from Ji-Paraná, the fastest growing town in the Amazon.

The background for the conflicts was the absence of preventive measures in the colonization process promoted by INCRA, and the omission of FUNAI, aggravated by the patronage which accompanied the first elections of the new State of Rondônia

The company which made the land survey, and the demarcation of the lots in the Nova Colina INCRA project, by a technical error or for obscure reasons, demarcated 39 lots inside the Lourdes I.A.. FUNAI's absence permitted that lines 70 and 80 of the INCRA project, be prolonged irregularly by the invaders and that improvised bridges be built over the Prainha igarapé. A farmers condominium, led by the

Castanhal Farm, crossed the Indian lands with a cattle passage, which became within years, a real road for easy invasion.

From 39 settlers, victims of INCRA's technical error, there were in 1984 about 600, occupying almost a third of the Indian Area, which is totally devastated in its southern part. By court order, the lands were returned to the Indians. A survey of the invasion revealed that only 49 families that were using the lots were really disfavoured. The others were tradesmen, logging field hands, liberal professionals and others from the town of Ji-Paraná, interested in keeping a hold in the Indian area to build a second house or for pure speculation. The value of these lands increased highly in value, due to the proximity of the road and a town which, in a decade, had its population grow from a few thousand to 250.000.

The tension came to a very dangerous point. In 1985 the Indians kept 17 invaders as hostages in the main house of the Lourdes Indian Area, for 30 days, conditioning their freedom to the removal of the invaders. Three Catholic Missionaries were detained. Although they were in favour of the Indians, they made mistakes and behaved like the invaders. The Indians succeeded in having the Castanhal road make a detour to the south, but it still invades the area.

Rondônia politicians openly encouraged the invasions, promising to pressure Brasília to take away Indian lands, in exchange for votes. During the 1986 electoral process, various candidates of different parties incited the invasion of the area. Tension is great in the area limits and new conflict may arise with the Eletronorte decision to build a hydroelectric power plant on the Machado Ji-Paraná river. It will flood 10% of the Indian Area, making useless almost half of it, including its two main villages.

BR-364 and the Karitiana Indian Area

Even before the road paving and Polonoroeste, the colonization progress caused by BR-264, bore the transference of the Karitiana from the river Candeias region, where they lived since time immemorial, to the side of the Garças river, where their lands were recently demarcated. The Indians complain that they were transferred to lands with few rivers and poorer than their original ones. One group which refused contact continued isolated on the Candeias river and was never heard of again.

Up to the 1970's they suffered several assaults, by mining concerns and settlers, but now they take many precautions against invaders, and when they capture them, they hand them over to FUNAI. The great menace hovering over them is the projected BR-010, part of the DER (RO) and DNER plans, which have not yet been altered. Only bureaucratic inertia opposes a change of the plan.

The Karitiana have shown how a road can be controlled and not be harmful. They maintain one, themselves, including a bridge which cost them many months work, and they control it perfectly, deterring invasions.

5. BR-429 and BR-425, towards Bolivia

As for the Uru Eu Wau Wau, the coincidence is clear, between the proximity of roads to their lands and the increase in conflicts. Also the concurring intensification of "pacification" and "attraction" expeditions and the resulting disasters, particularly to their health. The Madeira-Mamoré Railway coincides with the "attraction" posts in the beginning of this century, in the Jaci-Paraná and Mutum-Paraná rivers. The BR-029, first version of BR-364, coincides with the incidents of the disappearance of an officer, Lieutenant Fernando, and the search operations, which were fatal to many of the so called Boca-Preta Indians, due to epidemics and massacres.

BR-364, paved without previous protective measures being taken for the Indian groups, particularly for the isolated ones, has brought with it permanent occupation. It made possible the incredible growth of the villages it passes through, and transformed them into the towns of Ariquemes, Ouro Preto, Jaru, close to the Uru Eu Wau Wau villages. Others, are becoming towns, like Mirante da Serra, Alvorada do Oeste, São Miguel and Bom Princípio. The urban centres of the colonization projects are becoming municipalities.

If the official highways network was planned without any attention to the Indians, it can be imagined what happens with an uncontrollable and irregular one. The impact of these initiatives on the Uru Eu Wau Wau goes back to the cassiterite road, the RO-1, which linked Ariquemes to BR-029 to the mines at the Candeias river in the 1960's. The region, from which the Indians were banished first, and later the gold miners, is now occupied by mining companies which at the time, promised to pay the Indians 10% of their income, but never did.

A researcher described how, in 1980, BR-429 was planned to cross the Pacaas-Novas National Park and the Uru Eu Wau Wau lands, for the most part superimposed on each other (Costa, 1981:89) The Indians walked around the road workers camp. At Km. 83. close to the Urupá river's left bank, a settler showed Costa a hunting track which crossed his future farm, where he had seen six Indians crossing the river. At km.98, he found a hunting camp, and further on, "the place where a tapir had been cut and vestiges of the fire where it had been smoked".

The Uru Eu Wau Wau Area to be demarcated and regularized in 1985 by Presidential Decree would protect the Kawahiwa groups which were in the contact phase, and had resisted for a century the colonization progress. The contact began in 1980, after an Indian attack against a settler's family of Project Burareiro and against two other invaders. In spite of FUNAI's warnings, INCRA insisted on dividing the southern part of Burareiro, where there had been deaths. The Indians attacked again in 1983, killing one more settler. They have killed dozens of invaders in the last years.

Despite the demarcation, the invaders are numerous, due to the proximity of the town of Ariquemes, and the great increase in land values. 11,000 cubic metres of tree trunks were apprehended, from a deforestation promoted by the Urupá and Cometa wood companies, which have been negotiating with FUNAI's president. Fur hunters, settlers, mining companies, keep the Indians permanently in a state of war, causing dozens of deaths in the last decade. The Indians hurt three FUNAI officers in the beginning of the contact.

About 100 settlers received property titles in the proximity of Cachoeira de Montenegro, which is claimed by the Indians. Only about 10 lots were occupied by the settlers, who could be easily resettled. Most lots were offered to Ariquemes residents, such as a medical doctor, the mayor's secretary, the town's hotel keeper, liberal professionals and tradesmen. They even succeeded in preventing the registration of the Presidential decree in the local Register Office and they have a powerful lobby in Brasília. In January 1990, they contrived to make President Sarney go back on the demarcation. However, the Attorney General's Office appealed to the Supreme Court, on behalf of the Indians.

INCRA received funds to resettle needy settlers who had property documents, but due to bureaucratic blunders and strong political pressures, it has not yet started to make the necessary surveys. During elections, the settlers with titled deeds were urged to occupy their lots, despite the Indians resistance. The area also faces law suits moved by speculators, with false claims to the rubber plantations of the beginning of the century, which mean thousands of hectares. Such plantations were never able to be installed in the area due to Indian attacks and numerous massacres of whole Indian villages, promoted by the rubber latex explorers Chaves and Lucino. In the 1960's the conflicts became worse, due to the cassiterite mines which are still coveted by several mining companies.

Besides protecting the Indians, the decree protected the Amazon River's large tributary's sources, which rise in this mountainous, infertile area. It is a very peculiar area of Rondônia, which concentrates the sources of the great affluents of the Guaporé river, such as the São Miguel and the Cautário; of the Mamoré, such as the Sotério and the

Pacaas Novos; of the Madeira, such as the Jaci-Paraná, Mutum-Paraná, Candeias, Jamari and of the Ji-Paraná or Machado, such as the Jarú, Urupá, Muqui and many others. It is one of the few elevations in the Amazon, and there is an immense concentration of springs.

The devastation of the forest already threatens the middle course of these rivers. The preservation of these sources is fundamental to the future of the State and of the whole Amazon basin. The area's soil is mostly the rocky lands of the Pacaas Novas and Uopianes ridge, which is unavailable for colonization and of low fertility.

The Indians are actually disputing the river sources with the invaders, they are taking the noble part in the area, which is insignificant in size and consists mostly of fields and stones. The Indians are, therefore, positively contributing to the preservation of the main sources of the new State water basins.

The Uru Eu Wau Wau groups were thousands in the beginning of the century, now they are reduced to hundreds, and are running the risk of being reduced to tens, by the end of their contact with FUNAI, which has just begun. This has been the fate of all the groups which have been in contact in the last decades in Rondônia, such as the Suruí, Cinta-Larga, Karipuna, as similarly happened in the beginning of the century with the Rondon Mission, which installed the first telegraph lines.

The badly informed, short term posture of the political elite of Rondônia is the main threat to these Indians. They resist the magnitude of the interdicted area because they do not understand the importance of its preservation. On the other hand, the Indians could not have been pushed further into the ridge's interior, because its lands are barren, and hunting and fishing is impossible. For the most part, the rocky lands would not permit the survival of settlers. This is, naturally, a first class preservation area. There is a convention with the ex-IBDF/IBAMA, which holds the central area with the Pacas Novas National Park and should administer the whole area, according to the 1985 decree.

The Uru Eu Wau Wau were perhaps the main victims of BR-429. It passed, at Urupá river, as close as one kilometre from a village where 12 corpses were uncovered. Since the beginning of its construction, invasions and confrontations increased. The Indian attacks, against road workers, forced a change in its route. But the road impelled and directed the occupation to Indian lands and revived colonization projects around the area, such as the Burareiro, Jarú, Ouro Preto, Mirante da Serra, Alvorada do Oeste, São Miguel and Bom Princípio. It continues to push colonization forward, now, from the Cautário river to the Sotério. So the siege on the Indians was intensified, which had been already instigated by the rubber explorers and mining companies.

The Indians that maintained initial contacts with FUNAI, were about 400, from six villages. There are two other groups without any contact.

Besides the bullets from the invaders, epidemics decimate them. In one visit, from the precarious health care that FUNAI provides, it was found out that a whole village of 100 Indians had pneumonia.

The demarcation was badly done. It is not identifiable, has been covered up by brush and the border markers have been displaced by the invaders. FUNAI did not even check it, when it was received. Confrontations are very grave. Gold miners are invading from the south, mining companies from the north, and settlers from the south and northeast. Apparently, a group of settlers has recently killed two Indians. The paving of BR-429 may mean the genocide of the isolated groups still living in the area, such as the Araparaquara and Jururei, and the destruction of Rondônia's most important area of permanent preservation, the nervous system of its rivers, jeopardizing the future of the current occupation of the State (Leonel, 1991)

BR-429, paving without preparation

Information gathered by the attraction expedition led by Apoena Meirelles, caused the interdiction of BR-429 at Km. 106, but only for a short time. (Costa, 1981:90). The expedition group also got a commitment from INCRA, that they would not establish settlers on the right side of the Urupá river. These measures and commitments did not last very long. A few months afterwards, INCRA would continue to distribute and legalize areas in the vicinity. BR-429, with some changes in its design, was ready in 1986. Its paving has now been started.

SEPLAN in Brasília was reluctant and the World Bank pronounced against paving BR-429, having learned since the paving of BR-364, which did not have any protective measures for the Indians. The road links Presidente Medici to Costa Marques, that is, BR-364 to the Guaporé river, to the Bolivian border. Rondônia government is earnestly striving to get the road paved. The World Bank conditioned its participation in co-financing the work, through the Polonoroeste Program, to preventive measures being taken to protect the Indians and the environment, according to their present norms.

Environmental legislation also committed the government of Rondônia to submit the Environment Impact Report -(RIMA), prior to the construction of the road. It improvised a RIMA, regarding fifty kilometres along the road, which could not stand the simplest analysis. Facing such obstacles, Rondônia's government endeavoured to obtain the financing directly from SEPLAN, thus by-passing the World Bank's requirements. The financing might come from other special federal sources, such as PIN or Finsocial.

The most interested parties were the big construction companies, such as Camargo Correa and Mendes Jr., which the Juscelino Kubitschek had



The BR-429 opened up the south of Rondonia to the loggers and gold prospectors.

brought to Rondônia in 1960, for BR-029. The presence of machines in the area makes it more profitable to use them there, than to transport them elsewhere, as is the case for Mendes Jr.

The paving of BR-429, in its influence area, represents a menace to eleven known Indian areas, if protection measures are not taken, besides reaching various not contacted and homeless groups. All of southern Rondônia is influenced by this road and its network, because it is the only access to BR-364. The paving is planned for the south of Rondônia and the northeast of Bolivia. At once, the merchants from Costa Marques and from the neighbouring Bolivian town of San Joaquin, began to try to extend the road into Bolivian territory, without any preoccupation about the Indians or the natural resources of the neighbouring country.

It is possible to evaluate the environmental impact of BR-429 on the neighbouring areas, since the road functions in the summer. It was built to be quickly paved, with a finish that is above average in the region. In the winter of 1987, it functioned despite the heavy rains, although traffic was slow and interrupted. In the last years, it has been functioning, at a slower pace, even in the rainy season.

BR-429 has created so many conflicts and distortions that, it can be said that it can bear witness against its own paving, even if it works fully during the dry season. Unless preventive measures are taken, which does not seem to be the case. This road is not a simple branch of BR-364. It is its heir and a channel for its distortions, it is its escape valve. It intends to populate the last forest region of Rondônia and colonize low quality soil.

BR-364 encouraged an important migration boom. The capacity of INCRA's official settlement projects, such as the Urupá and Machadinho, financed by Polonoroeste, was for about three to four thousand lots. However, 151.621 migrants arrived in the new State in 1985, representing an annual growth rate of 251% (SEPLAN/RO, 1987). With some improvised projects, BR-429 allowed the "quick settlement" of part of the migrants. The remainder were induced to go on to Acre or Roraima, or became part of an immense legion of spare manual workers for the construction companies, logging, mining companies, cattle raising, agriculture companies and gold-mining, overcrowding the cities, where 2/3 of Rondônia's inhabitants live.

The sides of BR-429 were occupied in an uncontrolled process. INCRA kept running to try and catch up with what was occurring. As BR-429 was being opened, settlers were taking over the lots, since they were well placed in INCRA's list, which had about 20.000 candidates, in 1985. By 1990 there were 70.000 awaiting lots. This process resulted in the settlements of Alvorada do Oeste, Mirante da Serra, São Miguel, Bom Princípio and others, which are all situated alongside BR-429 and its branches.

All these quick settlement projects are taking place in low fertility lands and with a probable incidence of malaria. The settlers are deceived, in their just eagerness for land. But the major victims are still the Indians, the traditional settlers from the beginning of the century, the rubber tappers and the river population. Yet, since 1980, the Ministry of Agriculture at least, knew that the lands in the new State were unsuitable for agriculture.

BR-429 is a good example of the environmental consequences of opening roads without precautionary measures. It trespassed on the Uru Eu Wau Wau lands and those of the isolated groups, such as the Jururei, of the river Muqui, who are still not quite known. It stimulated official and uncontrolled colonization, as well as the action of logging and mining companies. A few months after its opening, a big fishing company promoted predatory fishing with dynamite in the Guaporé river, the last Rondônia frontier. Refrigerated trucks carried the fish to the big consumer centres.

The traditional dweller of the Guaporé Valley was violently harmed by the fishing companies, as well as the fishermen and riverine populations. The rubber latex extractor saw the settlers demarcating the rubber forests, from which they make their living. The Indians, were again the main victims.

In Rondônia, in Brasília and at the international financial agencies the theme now is whether it should be paved. It was carefully built, to be paved soon after, and the construction companies never hid such purpose. The opening of BR-429 was not preceded by considerations about the impact on the environment, much less of its interference on the isolated indigenous groups, or even on the riverine populations and rubber latex extractor. Economic self interests of the construction companies added to the eagerness of the logging, mining companies and agricultural companies in search of easy fortunes, accelerated the work. Added to this, the pressure of the landless settlers who came by the thousands, when the military government promised land and infrastructure. Besides, the interests of a recently formed caste of local politicians of southern origin. Such demographic pressure, added to the exhaustion of better structured colonization projects, stimulated the expansion towards unplanned regions, at least in the framework of Polonoroeste, as was the case of the Guaporé Valley.

The colonization around BR-364, before and after the Polonoroeste Program, took place starting from the urban centres, such as Vilhena, Ji-Paraná, Pimenta Bueno, Cacoal, Presidente Medici and Ariquenes. Projects, like Burareiro, Jaru, Ouro Preto etc., came from that area of influence. But other projects, mostly irregular, or other attempts by spontaneous colonization order, such as are occurring in Rolim de

Moura, Alta Floresta, Nova Brasilândia, Bom Princípio and Costa Marques, have depended fundamentally on BR-429.

It would be of great importance to make a specific study of the consequences of BR-429 on the traditional populations of the region, the riverine, rubber tappers, other extractors and populations which, until then, had a self sufficient economy or, at least, with limited channels to the market. Another specific and indispensable study, would be particularly to the contribution of BR-429 to the grave and predatory deforestation, now going on in Rondônia.

It is also important to remark that, besides the official roads, there are the corridors opened by the wood merchants, which also have the effect of making mahogany and cherry forests into spearheads for the highway network expansion. The impact of these just passable trails that use the highway as an axis, is to create an artery through which flows the colonization expansion. For one exportable tree, a small transitory trail is opened, destroying everything on the way.

A hurried paving of BR-429, is certainly not convenient for the Indians, nor for the national society, or for the traditional settlers who came in the beginning of the century, at least as it is proposed: BR-429 represents the exposure of the Guaporé Valley to colonization. It is the last of Rondônia's regions, where an occupation could take place with the appropriate use of the natural resources. The paving should at least be postponed and preceded by measures, such as appropriate zoning; definition of protection areas; definition of extraction reserves; a plan for the use of navigable rivers; diversification of production possibilities; guarantees for the protection zones against predatory fishing; a compatible plan for the occupation of the Guaporé and Mamoré valleys; of the soil fertility for colonization; of contention measures against deforestation; of protection and analysis of the present occupants, the Indian and the Amazonian extractor; of the potentiality of natural resources renewal; of the possibility of expansion toward more fertile soils, and so on.

Revision of Rondonia's roads plan

In November, 1984, the FIPE-USP group which was evaluating the Polonoroeste Program and experts from the World Bank warned DER/RO, but nothing was done to change the roads plan. It is alleged that it needs approval from DNER, but no initiative was taken. The plan is a menace to the ecological reserves. The most serious example is the Guaporé Biologic Reserve. If the plan is implemented, the reserve will be cut three times, becoming unviable as a permanent preservation area. At least two other ecological reserves will be cut.

Here we are considering only the official roads that cross the permanent preservation areas, but there are uncountable ones that pass by the proximities. Although many environmentalists recommend a distance of twenty kilometres, this proposal has not been incorporated into the mental universe of the planners.

The most serious public warning was given in an article by the INPA researchers Ferreira and Fearnside, for the magazine "Ciência Hoje" (Science Today)(1985:90), with the title: "Rondônia: a farsa das reservas" (Rondônia: the farce of the reserves). DER technicians told us that the plan is being altered, and that the delay was due to bureaucratic difficulties and agreements with the DNER, the standard federal division for highways planning. What is alarming, is the nonexistence of an alternative roads plan, which would avoid ecological and indigenous reserves; there is also evidence of the implementation of the original plan, with BR-421 being resumed.

It has been possible to establish that nine stretches of official roads would cross indigenous areas. The Karipuna and Uru Eu Wau Wau would be crossed twice. The Uru Eu Wau Wau area, by the projected BR-370 in the west and by BR-010 in the north. Other roads pass dangerously close, such as BR-429 and other uncontrollrd routes, such as BR-421. Ferreira and Fearnside's study (1985:90), indicated the menace from six roads, either projected or under construction, to six Indian areas. This picture is now worse.: 1.- The interdicted Karipuna area may be cut in the north by RO-257. 2.- The same interdicted Karipuna area, may be cut, in the south, by RO-370 3.- The Rio Branco Indian Area, may be cut in half by the same RO-370 4.- The Rio Negro Ocaia Indian Area, may be cut, in the east, by the same RO-370. 5.- The Uru Eu Wau Wau Indian Area, may be cut by the same RO-370, in the west. 6.- The Uru Eu Wau Wau area may be cut, in the north, by BR-010. 7.- The Rio Mequens Indian Area, may be cut in half, by RO-370. 8.- The Roosevelt Indian Area, may be cut in half, by RO-380.

9.- The Tubarão/Latundê, may be cut, in the northwest, by RO-391.

It has not been possible, in the frame of this work, to establish to what point these roads are being constructed or are only projected. According to information from technicians, there are no updated road maps of the Rondônia region, but that one was being prepared by a private firm, through DER-RO, ordered by some mining companies. In any case, the data, presented here, are enough to justify a revision of the Rondônia Roads Plan.

It is noteworthy that all the roads here mentioned as of potential interference in the indigenous areas have a possible alternative design with short detours, except for RO-387, which must take another route, since it fundamentally threatens the Aripuanã Park, and it's construction should stop at the limit of the Indian Area and by-pass it.

The Rondônia Roads Plan, to be re-clarified, must count with FUNAI's and independent researchers previous reports, due to the existence of still isolated groups.

BR-421-A Private road

This road was interdicted, for some time, in 1978, by request of FUNAI's manager, Apoena Meirelles, close to the Candeias river, due to the deaths that had occurred there. For some years, it was possible to deter its construction, until the contact with part of the Indians of the area.

In 1980, when Costa visited the Campo Novo region, where the Mibrasa mining company, the gold miners told of the presence of Indians in the area (1981:84). Gold miners, "gateiros" (middlemen for cheap labour) and rubber tappers multiplied conflicts with the Indians. The road interested, above all, the big cassiterite mining companies operating north of the Uru Eu Wau Wau Indian Area.

In 1986, several wood merchants, associated with the mining and agriculture companies, settlers and local interests, decided to open the road without any State or Federal program. Besides presenting a risk to the Uru Eu Wau Wau, who still walk around the road, BR-421 will probably cross the interdicted lands of the Karipuna group (Kawahiwa), those who refused contact, and the same will happen with the Karitiana, whom FUNAI has not made any effort to localize, in recent years.

The logging companies, established unofficial contacts with the government of Rondônia, before starting such a task. They have the blessings of the State authorities, and were not warned of the consequences of their initiative, and FUNAI was not asked to make any surveys first. As it is a private road, it will be even more difficult to control its route, which can be altered according to local interests, by SEPLAN/RO technicians. To give cover to these interests, INCRA encourages squatters, and has recently, promoted projects in the vicinity of the area

Control of improvised roads

The official state roads obey a main plan which it is possible to alter and adapt. However, it would be most difficult to control and eventually restrain, secondary and irregular roads. The most dramatic risk to the Indian areas are the improvised private roads. Official roads can be discussed in Congress or the Judiciary and so minimize their effect with previous measures or changes in design.

The most difficult to control are the irregular roads, the network spawned from the official ones. These are a permanent threat to the indigenous areas and much more to the isolated groups. There are uncountable examples in Brazil, and in the BR-364 case. These roads are:

branches, lanes, connections between towns, links to one road to another, "picadas" (large trails) to mark boundaries, irregular extensions, access to public projects, access to hydroelectric plants, private roads for mining, access between farms or centres of uncontrolled colonization, by condominium, for wood carriers, etc.

These roads, that cross rivers by rafts and improvised bridges, work only in the dry season and depend on the official ones which receive them. Many of them, started as tracks, became important regional roads.

Three types of measures may be taken to control them and eliminate their interference: - first - through Landsat satellite photos, whose images were at Polonoroeste's disposal; by helicopter, as occurred, with some corrective results, during the "Acordo Interinstitucional de Defesa da Fauna e Flora de Rondônia" (an agreement for the preservation of the fauna and flora in Rondônia), through the action of the Forest Battalion, in Polonoroeste, overflying the boundaries, during the dry season. Legislation may be perfected and effect a control through IBAMA's prior authorization, even of those roads that are apparently harmless and short, so that, they keep away from the areas to be preserved.

The examples of BR-364 serve as arguments. The road of the condominium Fazenda Castanhal was, and still is, the invasion route into the Lourdes Indian Area; the same is true for the Condominium Lunardelli road, in the Zoró and Cinta Larga of the Roosevelt Indian Areas. These roads are always followed by irregular extensions of an INCRA or Interamat project, such as: the extension of the 641 line from the INCRA Jarú project into the Uru Eu Wau Wau Indian Area, by the Brumadinho mining company; RO-1, a cassiterite road, which is an access to Ariquemes and interferes in the Uru Eu Wau Wau Indian Area; a farmers lobby road, led by the ex-mayor of Espigão do Oeste, permitted invasions by several large scale agriculture and cattle grazing farms in the Roosevelt Indian Areas, which the Indians drove away; irregular extensions from various INCRA projects, such as Alta Floresta, in the Rio Branco Indian Area; Burareiro, Ouro Preto, Jarú, Bom Princípio and Mirante da Serra, in the Uru Eu Wau Wau; and the Zidolandia road, improvised by private and timber concerns, which are threatening the Guaporé isolated groups, between Alta Floresta and Rolim de Moura do Guaporé.

There are other more sophisticated invading roads, which count with the omission or collaboration of FUNAI's employees, such as the timber transport corridors, opened by the nine timber concerns which cut timber in the Rio Maquens Indian Area with the INCRA ; or the access road to "leased" farms on indigenous lands, as occurred in the Pareci Indian Area, involving the seduction of Indians, in exchange for favours, such as fuel or nursing posts, and other benefits which are, for the most part,

obligations of the Brazilian government to the assistance of the indigenous minority.

Roads and Ecological Reserves

The Fearnside and Ferreira report indicates roads that are planned and under construction, which interfere seriously in ecological reserves, such as the three highways that will cross the "Reserva Biológica do Guaporé" (Guaporé Biological Reserve): RO-383, linking Santa Luzia to Pedras Negras; RO-377, from Guaporé river to BR-429 and RO-370, from Cerejeiras to BR-429 (1985:90), where there are isolated Indians.

And further: "another case is the "Reserva Biologica do Jaru" (Jarú Biologic Reserve), which was a forest reserve, created in 1961, with an original area of about one million hectares, has been facing serious problems. The incorporation of part of the reserve into the "Projeto de Assentamento Dirigido Burareiro" (Burareiro Regulated Settlement Project),- which was intended to promote cocoa farming concerns - caused a drastic reduction of the area and the new denomination of the ecological reserve, with an official area of only 268.150 hectares in 1979. The reserve never had any protection service, so there is an indeterminate number of irregular settlers, who open clearings inside the boundaries. Besides that, it will suffer other reductions, with the opening of a new road, RO-357, linking the town of Ariquemes to the State of Mato Grosso"

Years after these warnings from the INPA experts, the biological and forest reserves, the national parks and the block reserves in Rondônia, were visibly more exposed to invasions and devastation. There is a lot of rhetoric in Brasília, but little initiative is permitted in the area. This statement is based on a SEMA/IBAMA map of the "Deforestation Tendencies", which showed invasions in every reserve, in 1988.

The issue is also relevant to the indigenous communities, which coincide, in many cases, with the ecological reserves. According to a report by ex-SEMA, via Landsat, all of them are colliding with the deforestation fronts. Although this is not the place, it would be worth an adequate study of these reserves, to answer some very important questions. Why, the Jarú Biological reserve does not meet the Ji-Paraná river, as should be obvious. Why the block Reserves of the Urupá were not linked to the Pacas Novas National Park? What was the allocation of resources for the defense of these areas? How is it permitted, that cassiterite mining companies and wood merchants sell out the forest reservation natural resources of the Jamari? And dozens of other questions without answers.

It would also be worth questioning the reason for a decree, since Minabras and Brumadinho mining companies have survey permits to the

north of the Pacaas-Novos National Park, and the Best group to the southwest. The same is happening in the Jaru Biological Reserve, with a concession to the BRASCAN/BP group; with a reserve being studied for the Candeias river also assigned to the BRASCAN group; Mequimbras has a permit to survey in the Urupá forest reserve, etc.

There is something else that certainly calls for attention, the presence of three mining companies who are active in the Jamari National Forest; Jacundá, Rondônia and Cachoeirinha. Almost all of this reserve is a mining concession to the BRASCAN/BP group, which is managing to destroy it. Instead of a preventive reserve against the mining concerns, it is a reserve for them.

Hydroelectric Power Plants and Mining Companies as a consequence of Roads

Such a vast area, as the Uru Eu Wau Wau and the superimposed Pacaas Novos National Park (ex-IBDF/IBAMA) is quite vulnerable to public and private projects. The dominating view is that these are badly utilized lands. With great effort, it was possible to alter the original design of BR-429 and BR-421. The Uru Eu Wau Wau groups who live in the area will be greatly hurt by several electrical enterprises and private mining companies, besides the roads, even before the current contact consolidation, if the projects are not altered.

The sources of the Jamari river and its tributaries are in the Uru Eu Wau Wau Indian Area. In this river, the Samuel Hydroelectric Power Plant was built by Eletronorte. Since the first study, made with the help of the Emilio Goeldi Museum, Eletronorte knew that the dam would hurt the "withdrawn" groups, who live between the rivers Jamari and Candeias. Unfortunately, the electrical power sector concept of impact is very narrow, trying to reduce interference in Indian lands, only when it can relocate the Indians. The isolated groups are not taken into account, since their lands are never interdicted or protected. Here is a quotation from an Eletronorte/FUNAI report : "Although the Urupá-in and Uru Eu Wau Wau groups are localized along the banks of the Jamari, their number and the place of their villages are unknown, so we do not foresee reaching their areas".

Actually, their villages are outside the flooded area. The dam is operating, and is quite far from the Uru Eu Wau Wau. Nevertheless, no expedition was sent to verify the presence of Indians in the vicinity. It is known that there are Parintintin and Arikem Indians settled along the Jamari, though not in villages. And between this river and the Candeias, there is a Karitiana group, which refused contact in the 1960's.

The interference of a construction in the Indians life, must also be measured by its indirect consequences. The most serious one is that it

causes regional pressure on the Indians, as much by the increased value of the lands, as by the many re-settlements, as happened in Itaipu, Tucuruí and Itaparica.

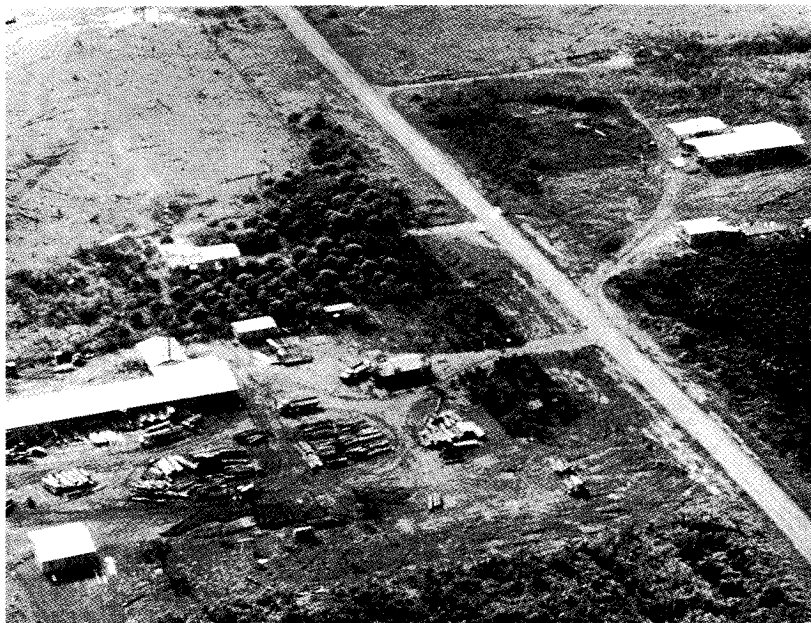
However, there are other effects to be studied about the flow of the rivers, the consequences on the fish, and therefore, on the nourishment of the Uru Eu Wau Wau, who fish upstream of the Samuel Power Plant. These issues must be better studied, and it is still not known what happens to the fish which need to travel upstream to deposit their eggs.

In any case, it would be in the interest of the Samuel Hydroelectric Plant, that the sources of the Jamari river, should be conveniently protected. It would only need an agreement with IBAMA and FUNAI. However, nothing was done, although it would be an encouragement to the protection of Paccas Novos National Park and the Indians and since Eletronorte is endowed with more resources than IBAMA or FUNAI, it could help in the defence of the northern area, which is one of the most threatened, specifically at Montenegro waterfall on the Jamari river

Eletronorte has yet another project which would interfere in the life of the Uru Eu Wau Wau. The project is for a hydroelectric power plant to be built on the Ji-Paraná (or Machado) river. It would severely hurt the Arara (Karo) the Gavião (Icolei) of the Lourdes Indian Area, and other non-settled and "withdrawn" Indians, and mean the relocation of hundreds of settlers. Besides this project, which is called Ji-Paraná, there is another, the JP-04, which would reach two Tenharim areas. A third project taking advantage of the opened roads, and not yet rejected, would be on the river Jarú, JR-13, which the effects on the Uru Eu Wau Wau have not been studied. The JP-14 also reaches the Jarú river.

The great dams, built by Eletrobras subsidiaries, such as Eletronorte, are not studied in relation to the Indians from a listing of the river basins potential. The Indians only get on the indemnities list if there is no other way out. It can be imagined how they are treated by the small regional and state concessions. Recently, there is a tendency to let private business take over the energy sector. The firm Goes Cohabita, for example, intends to build a small power plant on the 12 de Outubro river, in the Nambiquara Indians area, manipulating various Indian leaders, with FUNAI's complacency, to make them accept ridiculous indemnities for the invasion and disruption such as, access road, flooding, and employees in the area. The same has occurred with the firm CEMAT, who have tried to manipulate the Cinta Larga, of Serra Morena area, into a disadvantageous agreement.

The same situation is found with the Centrais Elétricas de Rondônia S.A., CERON. It's "Plan for Small and Middle Scale Hydro-electric Power Plants", was prepared without any thought about the social or environmental impacts. The state power stations are totally under the control of local and short term interests.



Rondonia today has more than 2.000 sawmills and in the north of Mato Grosso there are about 6.000.

Of the possible CERON power plants, two will certainly interfere in indigenous areas." Hidroelétrica Avila" will reach the Tubarão/Latundê Indian Area. "Paulo Saldanha" on the Branco river, is in the "withdrawn" Indians region, quite close to the Uru Eu Wau Wau, probably of the isolated Aruá, near the Rio Branco Indian Area.

There are still three other projects threatening the Uru Eu Wau Wau Indian Area. The Boca do Pompeu Hydroelectric Plant, on the Ouro Preto river; a second is being studied on the sources of the Pacaas Novos river, and another, the São Miguel river utility, which will interfere with the villages of groups not yet contacted.

Non of these hydro-electric utilities were even charted on a map to show their intrusion into, or proximity to, indigenous areas, nor their social and environmental impact on the riverine populations. The planning is directed by specific technical criteria, without thought to the social costs.- FUNAI, DNER, DNPM and the energy sector, do not have preventative or corrective systems to avoid the interference of roads, hydro-electric plants or mining concerns, in indigenous areas. Only the Indian protests, or the solidarity of a few, will be able to correct or

reduce the effects, but only after the fact, if it is possible. In most cases, it would be much easier to avoid them in advance:

HPP- Boca de Pompeu (Pacaas Novas Indian Area) HPP- Rio São Miguel (Uru Eu Wau Wau and isolated groups)

SCH- Cachimbo (Paulo Saldanha. isolated)

SCH- Alta Floresta (isolated)

HPP- Primavera (non-settled, withdrawn, Tubarão/Latundê)

Utilization-Rio São Paulo (Tubarão/Latundê and isolated)

Utilization-Corumbiara'(Tubarão/Latundê and isolated)

Utilization-Rio Enganado(Tubarão/Latundê and isolated)

Utilization-Rio Vermelho (isolated)

Utilizatoín-Rio Cabixi (isolated)

HPP - Avila (Tubarão/Latundê and isolated)

HPP - Samuel; an agreement is essential between IBAMA-FUNAI and Eletronorte to defend the sources of the Jamari river and its tributaries.

The objective of BR-429, BR-425 and their network, is to stimulate mineral extraction, and some branches will be opened to meet this purpose. An advance study is essential to make sure that these activities do not reach indigenous areas, where they are forbidden by the Constitution and are harmful to the Indians.

Prior measures would be the plotting on a map, and the repeal of surveying and prospecting permits, like the ones conceded to Mibrasa and Oriente Novo/Brumadinho, in the Uru Eu Wau Wau and Rio Negro Ocaia areas; Mequimbras, on the Rio Branco river; Oriente Novo, in the Ribeirão and Lage areas and the Karipuna; and Minas Aliança, in the Karipuna area. These permits were mapped out in the DER-RO consultant company's study, Proconstec, which was aimed precisely at the construction of BR-429 secondary roads which, as has been seen, are dangerous to the Indians. It is curious that DER-RO makes it's plans in close contact with the mining companies, without considering the social and environmental issues.

In a study by Cedi-Conage, other permits were identified south of Rondônia: Metalcon, Top Sol and Rondon, in the Tubarão/Latundê area; CPRM, on the Mequens river; CPRM, Sdo. Service and Cacimba on the Branco river; Brascan, Best, South A. P., Serra da Alvorada, Pompeia, CPRM, Vale da Muralha in the Uru Eu Wau Wau and Rio Negro Ocaia areas; Brascan in the Karitiana area; Brumadinho, Minas de Aliança, in the Lage and Ribeirão. In 1986, there were 396 permits and formal petitions for mineral prospecting permits in twenty five indigenous areas, covering over two million hectares.

Still more serious is the lack of control over mining companies and gold miners in the isolated Indian areas, as has been seen in the past, with the Yanomami, Waimiri/Atroari and Uru Eu Wau Wau.

BR-429 and 425, Jeopardize the Guaporé and Mamoré Rivers

The paving of BRs-429 and 425, now in progress, and already being used in all seasons, begs a forecast of how much they will mean as attraction magnets, after the paving is complete. An ex-Sema map, ordered by Polonoroeste, summing up the forest devastation in Rondônia, showed the high degree of deforestation and occupation along these highways. BR-429 was essential to the growth of villages, such as Mirante da Serra, Alvorada do Oeste and, more recently, São Miguel, Bom Pricipio and Novo Destino. Through the irregular, timber carrying roads, the expansion that came from Pimenta Bueno and Rolim de Moura was interlinked. The irregular road that is forging ahead from Alta Floresta to Rolim de Moura do Guaporé, connected to the timber merchants and to the Zidolandia private project, is the most serious menace, added to the, also private link, between Costa Marques and Guajará Mirim, that is, between BR-425 and BR-425.

The paving of BR-429, assuring traffic in all seasons, will tend to make it the axis for the occupation already started from all over the Guaporé Valley. Its link with Guajará Mirim, through the highway, via Costa Marques or by BR-421, will also jeopardize the Mamoré Valley and, thus, all the remaining protected regions of Rondônia. The irregular links can be forecast by the trend discovered in Landsat photos. The projected BR-370, linking BR-429 eastward to Cerejeira and Vilhena and westward, to BR-421, with Guajará-Mirim and Mutum-Paraná at BR-364, indicate that BR-429 will be the central point of all southern Rondônia, from BR-364 northward, to the border of Rondônia and Mato Grosso, eastward, having Guaporé to the south, and the Mamoré river and BR-425 to the west.

An analysis of the effects of the paved BRs-429 and 425 on the indigenous communities would encompass practically all the existing Indian areas in the south and west of Rondônia. Therefore, this diagnosis must be understood only as a contribution to an adequate administration plan for the Guaporé and Mamoré rivers.

This plan, as well as these previous measures, which were directly recommended to the government, without result, must be seen as urgent conditions to be fulfilled prior to the paving. The opposite would be to renounce the general interest and to yield to the pressure of the construction companies and of the easy and predatory fortune of minorities. For some time now, government and progress are no longer confused with the construction of highways. It demands the prior vision of the magnitude of its impact and the direction of the resulting occupation process. BR-429 and BR-425, added to BR-421, will interfere in: Karipuna Interdicted Area and the Ribeirão and Lage indigenous areas. In it's area of influence, all the indigenous areas in southern

Rondônia: Tubarão/Latundê, Rio Mequens, Rio Branco, Guaporé, Saragana, Pacaas Novas, Rio Negro Ocaia and Uru Eu Wau Wau. Including the not yet identified, unsettled and dispersed groups, besides the forest reserves of this region.

Tubarão/Latundó Indian Area

These Indians are part of the numerous groups, which have been found since the XVII century. The Portuguese in expeditions in the conquest of new lands, gold and precious stones, reached the Corumbiara river, where they found gold. There are three surviving Indian groups: the Latundê and Sabanê, Nambiquara subgroups, and the Aikaná, of isolated and little studied languages. These Nambiquara belong to more southerly groups, which did not accept the contact made by the Rondon Mission, in the beginning of the century. These Indians, as well as the Aikaná and many other groups on the right bank of the Guaporé river, were contacted later, due to the rubber extraction. Before that, they resisted, as well as they could, the gold miners and Indian snatchers.

Besides FUNAI, which was created in 1967 and only arrived there in 1975, there were two official appearances in the region: the scientific-mineral expedition of the Rondon Mission, guided by Lieutenant Estanislau Zach, who looked for the mines of the Corumbiara and Urucumacua rivers in the 1930's, and the SPI post "Ministro Pedro de Toledo", in 1945. SPI closed it down in the 1940's, due to the difficulty of access to this region, and tried to take the Indians to settle them in agrarian colonies, such as the Foz do Guaporé and Rodolfo Miranda, where the town of Ariquemes lies today. The Indians escaped. Part of them scattered and many died in epidemics.

When Brasília unfairly distributed the lots of the Corumbiara Project, in the 1970's, property documents were given, to private individuals, of lands that belonged to these and other, sometimes related, Indian groups. These individuals receiving lots of two thousand hectares for agriculture and cattle raising. These Indians and others resisted, forcing the demarcation of the Tubarão/Latundê Indian Area. Tubarão (shark) is a nickname given to the Aikaná by the people of the region.

FUNAI interdicted 200.000 hectares, inclusively covering lands of groups that are still, at the moment, "withdrawn". The Indians ended up with 118.000 hectares, after many FUNAI-INCRA conflicts which had to be solved in court. It is worth remembering that the Indians were transferred from the fertile lands, situated in lot # 21 to 28 and 31 to 38, to the lowest quality lands in tract 11, by force of the local economic interests.

FUNAI's assistance in the area is precarious and intermittent. Lately the Indians have been receiving the fanatical influence of fundamentalist protestant groups, through converted Terena Indian-Pastors.

The area has been demarcated physically, but it was slow to be regularized and registered in the official registers and in the SPU, due to the pressure of the military, who still held on to the "national security" theory, because there are borders in the region although dozens of kms. away from the Guaporé. At present the pressure comes from Vilhena, but the opening of the paved road will bring even worse consequences than the improvised access routes to Vilhena.

Rio Mequens Indian Area

All Guaporé historians make reference to the Mequens Indians. There were many attempts to settle them around the Jesuit Missions, in the XVIII century. In the 1930's they accepted contact with the rubber latex extractors and were practically enslaved, under a regime called "barracão", working for food and vouchers. They were decimated by successive measles epidemics. In 1983, FUNAI was incapable of helping them in a measles epidemic that killed 25. In 1985, a joint operation by FUNAI-IBDF-INCRA-POLONOROESTE, removed nine timber enterprises which were devastating the area, opening carrying roads through Indians villages. One of them had a saw mill and in its yard they found mahogany logs worth 500.000 US dollars, waiting for export.

The area is still not regularized, due to the pressure of residue pockets of the military regime, which believe in the "national security" theory. FUNAI's operation there is practically closed, and the Indians suffer constant threats from the timber, agriculture and cattle raising concerns. these groups are the survivors of the SPI attempts to transfer them to agrarian settlements, when part of them escaped from the boats where they were kept captive. Later they worked for the rubber extractors who had invaded their lands. The presence of one Bolivian rubber extractor made FUNAI, under the management of Alvaro Villas Boas, believe that they were all Bolivian, as hinted by the Lavrama timber company, the principal invader, contrary to consensus and ethno-historical evidence. Invasions are returning to the area. A paved road in the region will be another link to the INCRA Corumbiara Project "k zero", which stimulated invasions.

Rio Branco Indian Area

These Indians are the survivors of the great Indian nations who inhabited the Guaporé region, such as the Tupari, Macurap, Corumbiara, Aruá, Jabuti, Aricapu and Canoe. They had intermittent contacts with the Jesuit Missions until the arrival of the rubber latex extractors in the beginning

of the century, when they also were submitted to the semi-slavery of the "barracoes". There is a cemetery under an air field, with the bodies of over 400 who died during a measles epidemic in the 1950's. This area was demarcated by Polonoroeste in 1983, but did not include the Paulo Saldanha Waterfall and the Palhal village, situated in the Guaporé Biological reserve. In 1986, in an operation by PM-FUNAI-IBDF-POLONOROESTE, the "Acordo Interinstitucional para a Defesa da Flora e Fauna de Rondônia" (Agreement for the Preservation of the Fauna and Flora in Rondônia), they caught the timber merchants Estil and their contracted companies using tractors and big earth levelling machines, besides 3000 logs.

A lumberjack tried to retrieve a tractor and was killed by the Indians. According to witnesses, the Indians thought it was an attack by night, since the invader had fired some shots when he heard noises. The invasion threats come from northwest of the area, starting from the illegal extensions of the 50, 60 and 70 lines, and other INCRA projects in Alta Floresta. There are various deforestations, according to studies made by SEPLAN-RO, from Landsat photos. There are penetrations also in the northwest, from road branches and large trails, which start from BR-429, close to Bom Pricípio, the project that became a town.

Neither were "withdrawn" groups from the north, northeast and west considered in the demarcation. FUNAI's assistance is undependable and stopgap. The contact was made via Guajará-Mirim, through the Mamoré and Guaporé rivers, taking from 8 to 30 days. For a long time the Indians have been asking for improvements on their little road (10Km.) connecting the S. Luis central village to the INCRA lines, to be able to sell rubber and other products, at more advantageous prices, in the markets of Alta Floresta and Cacoal. The invasions, conflicts and malaria are consequences of the opening of BR-429 and of INCRA roads.

Guaporé Indian Area

It was formerly a SPI agrarian settlement, where they intended, without result, to concentrate as a reserve, all the Indian survivors of the Guaporé and Mamoré region, in the 1940's. The concentration of Indians would open their lands to the rubber extractors. Some SPI employees even sold some of these opened lands to the rubber latex extractors. The Guaporé area, formerly called Ricardo Franco, shelters the survivors of the Tupari, Macurap, Orouari, Aruá, Jaboti, Aricapu, Mequen, Sakirabiar, Aruju (Wayoro), Massaca, Canoe and Arara.

This area, where only Indians lived in the last decades, is the limit zone between the Tupi of Guaporé and the Chapacura of Mamoré, and was badly demarcated, leaving out villages and rubber forests. Complementary studies are being made, but the legal regularization of

the area has been hampered by the anachronism of the "national security" ideology. The paving of BR-429 will bring invaders to the area, which until now has been quite calm, as are the others of the Mamoré. Improvised roads are being opened from Costa Marques and Guajará Mirim, threatening the Guaporé, Saragana, Rio Negro Ocaia, Pacaas-Novas, Lage and Ribeirão areas. These irregular roads also endanger the extracted reserves of the Cautário and Mamoré regions.

Sagarana Indian Area

These lands, traditionally of the Orouari, were occupied in the 1950's by a Franciscan mission connected to the Guajará-Mirim prelacy, with a curious name: "Humankind Recuperation". Many Canoe families lived there. One of the last Orouari contacted groups, was transferred to Sagarana in 1969. Fifteen people died of an epidemic during the transference. At the time of its foundation, Sagarana was left under the responsibility of an eighteen year old Bolivian, who treated the Indians with extreme authoritarianism. Later, the Indians were assisted by French technical cooperators, who exchanged military service for social work in the Third World. Their medical treatment is better than FUNAI's.

Sagarana depends on the Guajará-Mirim Diocese, and is maintained with resources from European organizations, directed to the Third World and with the work of the Indians. The hesitation in solving the lands regularization caused in the last decades, a reduction of the area, from 30.000 to 9.500 hectares. Saragana has only been interdicted. The Indian Statute (Law 6001/73) permits these lands to be transformed into an Indigenous Domain, outside FUNAI's control, and destined to the Indians' full and autonomous usufruct. They could also be regularized according to "usucapion" law, since the Indians have been there for decades. Besides, they are part of the immemorial inheritance of the Guaporé and Mamoré groups. The area is adjacent to the Guaporé Indian Area, and could be demarcated simultaneously. However, there is still another probable obstacle: the military group which is still attached to the cold war and national security theories, because it is a frontier area. It will also be harmed by the roads of southern Rondônia, particularly by the link of BR-429, from Costa-Marques, to BR-425 in Guajará-Mirim.

Paca Nova Indian Area

The Pacaa Nova Indian Area is the most diverse in Rondônia, including with different Orouari groups, the Orodätso in particular, and scores of Oroboni, Oreon, Oroat, Ororam and Ororamtxiem. This is the area where, in the 1950's, rubber extraction was resumed, colonization was stimulated. It was then that the first contact with the Orouari took place. These groups had, from time immemorial, occupied the right bank of the

1945. It used to be connected to the Ribeirão Indian Post but was severed by the Rondon Project during the military regime.

They are surrounded by settlers and suffer a high incidence of malaria and worms since the newcomers took over the river sources. Invasions are constant, due to the proximity to Guajará-Mirim, the main urban centre of Mamoré, and BR-425. These Indians banished the New Tribes missionaries. At least, their small stretch of land has been demarcated and regularized. They will be harmed by the paving of BR-429, due to the impetus it will offer to a new colonization rush in the Mamoré area, a definitive one, connected to the current paving of BR-425, promoted by the Guajará-Mirim mayor and city council, with State support.

Ribeirão Indian Area

This is the area where, in the 1940's, the SPI began to attract the Orouari to the Post, then called Major Amarante. It was separated from Lage during the improvised demarcation by the Rondon Project, and presents a picture of great deforestation, confirmed by Landsat photos.

There was recently a serious epidemic. Despite the proximity to Guajará-Mirim and the easy access, medical assistance is very poor, due to FUNAI's deficient administration. Difficulties will increase with the paving of the interlinked BRs-421 and 429.

Karipuna Interdicted Area

The Karipuna were contacted in 1976. There were about 70 of them. After contact epidemics, there were 8 survivors. Today there may be 20. Other larger groups, related to these Kawahiwa, did not accept contact and remain isolated in the vicinity. The interdicted area, as well as the isolated groups are seriously threatened by BR-421 and by irregular colonization projects. Lately, gold miners have been invading the area, coming from Roraima. These Indians are related to the Uru Eu Wau Wau and resisted the Madeira Mamoré railway and the rubber plantations. Of a group, which accepted contact with the SPI in the 40's, only one survived: he is the interpreter. This is what remains of the Indians who terrorized in the beginning of Rondônia's colonization. The BR-421 and its network, will also reach the Karipuna area, added to the large trails and neighbouring colonization projects.

Unidentified, not yet Contacted and Isolated Indian Groups

These groups are the most exposed to the consequences of BRs-421, 425 and 429 and to the colonization rush in southern Rondônia, which will be inevitable after the paving. They should be found, identified and their

lands assured, before any colonization project in the Amazon. Nowadays, it might not even be necessary to contact them, since the rubber extractors, the riverine and the regional population, are able to recognize the area that the Indians occupy, thus making possible its interdiction and protection. The large thorns they put on the trails or the fallen trees in the invaders way, indicate their limits, and colonization should respect them. The protection they really need, is to their health and against invasions.

The official agency for indigenous affairs has really been proved inefficient in protecting the lands and the health of the "withdrawn" or "fierce" Indians, particularly in the zones of great expansion, such as the Polonoroeste. BR-429 and its planned and irregular network, will certainly strike these Indians, as has occurred at the rivers Muqui, Manoel Correia Rio Branco, Cautário, etc.

Igarapé Omeré

A recent massacre of a group of Indians in the Corumbiara river region, is one of the darkest episodes of the Polonoroeste. In 1984, a group of unknown Indians shot arrows at a saw mill named Xipinguaia, in the Cerejeira district. FUNAI was notified and sent a reconnaissance expedition. Indians, who accompanied the employees, found recently planted fields, huts destroyed by tractors, and fired cartridges, in the vicinity of the Omare Igarapé.

Through pressure by humanitarian groups and by responsible FUNAI employees, the area was interdicted. The invading farmers and logging concerns filed an appeal in court and won, in the first instance, later, a second action guaranteed the interdiction, for the identification of the unknown Indian group. Although victorious in court, FUNAI liberated the lands to the farmers.

The main signs of the presence of Indians in the area, appeared on the Yvipitã Farm. According to the people of the region, the Indians had resisted a tractor, which tried to pass across their planted fields. Its worth mentioning that, it was in this group of farms, that the Ministry of Labour and the Federal Police, found the largest group of victims of white slavery and violence in the State of Rondônia.

The owner of the Yvipitã Farm, Antonio Junqueira Villela has been accused of murdering gold miners. Even during the interdiction period, the farmers continued the deforestation, to destroy the traces of Indian occupation.

The Federal Police verified the signs of Indian presence, identified by the FUNAI employees, but did not investigate the accusations and evidences that the farmers had ordered the murder of about 10 Indians in that place. One of the principal witnesses is hiding, afraid of reprisals.

Recently, FUNAI's official "attraction" staff, visited the area and reported that, if there were survivors, they must have left the area for a safer region. The murderers unpunished, the Indians dead or in hiding, robbed of their lands. This is the danger threatening the isolated groups, which are usually not large, and afraid of the colonizers guns. The BR-429 network will certainly reach them.

The Rivers Massaco, Colorado, Terebinto, São Simão Rivers, Baía Rica and Rio Branco - Aruô or unknown

A group of FUNAI employees went to this region in 1989/90, at the request of Polonoroeste, for an evaluation. There are traces of probably the largest isolated group of the Guaporé, already reached by BR-429. They were seen by INCRA workers when they were opening the Nova Brasilândia Project. These Indians followed the military staff that demarcated the Rio Branco Indian Post, during the opening of the northeastern limit trails, which crossed their recently abandoned villages, that seemed to have sheltered dozens of Indians. A trail that led to a "tapiri" (a round hut) was found by the IBDF workers, northeast of the Guaporé Biological Reserve. The few Aruá (Tupy-Monde) of the Rio Branco survivors, informed that they had close relatives in the vicinity, who had refused contact.

Rubber tappers refer to an Indian zone, where they do not dare enter, in the Baía Rica and Colorado rubber forests. One of the rubber tappers had married an Indian after a visit from the unknown Indians, and sometimes is visited by her relatives at the bank of the Guaporé river. An unknown group has been seen frequently, on the Pau D'Oleo Farm (a Rondônia government farm). Apparently, unknown Indians helped to form a farm by the Colorado river, called Santo Antonio, owned by a Mr. Barbosa. According to a Macurap Indian of the Mequens river, they were 300, and after an epidemic, only 70 survived.

There are FUNAI maps which show unknown Indians' villages in the Pareci mountain range, at the mentioned rivers sources and at the numerous islands, between the river Branco and Mequens, and at their sources. A farmer, known as "colonel" Antonio, connected to the Dinamo group of enterprises, opened a road to transport wood from the Guaporé Biological Reserve, where these Indians live, as evidenced by findings, such as bows and arrows. The worst invasion is by lines of the irregular Zidolandia colonization project, encouraged by an ex-mayor of Alta Floresta. The intention is to open a road from Alta Floresta to Rolim de Moura do Guaporé, all of this without any prior environmental measures or any consideration to the protection of Indians. Part of the area occupied by the Indians, coincides with the Guaporé Biological Reserve, where they have been seen by FUNAI workers.

They should be protected, but IBAMA has been tolerating settlers and logging companies in the area.

The Rivers São Miguel, Bananeiras, Jurupôri, Manuel Correia, Palmelenhos, Miguelinhos Urupôin or Poruborô.

All the rubber enterprises which tried to settle along these rivers, were attacked. BR-429 crossed the middle of this region, without any previous identification work by FUNAI. The unknown Indians killed two field hands and injured a geologist from the Pompeia mining company, who was working for the Sopemi Group. A miner reported to the Federal Police in Porto Velho a recent massacre of Indians in the area, which was never verified. They could be part of the Kawahiwa/Uru Eu Wau Wau outside the demarcated area, such as the Jururei group, to which the Uru Eu Wau Wau refer repeatedly, that invited FUNAI to visit them.

The Rivers Muqui and Ricardo Franco - Jururei Kawahiwa unknown.

The Rondon Mission met Indians in this region in 1910. Claude Levi-Strauss lived with an isolated Kawahiwa group by the Muqui river in the late 1930's, as described in "Tristes Trópicos" (1981:315) In the 1960's, rubber plantations were attacked at the Muqui and at the Ricardo Franco. The Uru Eu Wau Wau Area covers the source, but not the mid-rivers and other sources of the Moreira Cabral mountains, exposing them to the colonization that BR-429 stimulates.

Settlers recently reported to the Ji-Paraná Town Council, that they have been attacked by Indians at four kilometres from the demarcated Uru Eu Wau Wau Area limits. A FUNAI expedition had a brief contact with an Indian couple, also outside the Area. The woman spoke Tupi-Kawahiwa, according to the FUNAI interpreter. The colonization and BR-429 occupied this river region at such speed that FUNAI will never catch up. INCRA divides the neighbouring areas into lots. They killed two settlers and threw the bodies on the other side of the Muqui river, showing the limit of their tolerance.

The Rivers Sotério, Cautório and Pacaas Novas

For many decades unknown Indians visited, sporadically, the Rio Negro Ocaia, Guaporé and Ribeirão Indian Areas. The Uru Eu Wau Wau reported that there is another group, not Kawahiwa, the Araparaquara, in the same direction, which live in a land that becomes an island during the rainy season, and come out, to go hunting and fishing, in the dry season. This region will be soon reached by BR-429, though a branch,

which will link it to BR-425. The Orouari make reference to isolated groups, ethnically related to them, in the same region.

The Rivers Jaci-Paranô, Mutum-Paranô, Capivari, and Formoso Karipuna/Kkawahiwa

These Indians have been alluded to, since the beginning of the century. FUNAI went on a reconnaissance expedition to the Jaci-Paraná. People of the region report that the Indians move more frequently along the Capivari and Formoso rivers. They refused contact in 1978, during the Karipuna pacification.

Jamari River and Candeias - Karitiana or Ariken

Benamour Fontes, a FUNAI administrator in Porto Velho, had a report, from a rubber tapper about these Indians. The Karitiana confirmed that a part of the group refused contact, before they were transferred to the Garças river. The Uru Eu Wau Wau, refer to a group in the Tracoa mountain range, but it is not known whether they are the same.

Indians Dislodged from Their Villages or Dispersed

These are families, or sometimes, individuals, which live among the regional people, survivors of extinct groups, who speak Portuguese with difficulty. FUNAI does not have an assistance project or differentiated solutions for these cases:

Parintintin - Madeira, Machado rivers, BR-364. The Parintintin dispersed for lack of guarantees of their lands around the Madeira rivers. It would be easy to reunite them, after a study of the situation.

Massaca, Campé - Porto Velho, Rolim de Moura (Mequens Estuary). There are two families in the Agriculture Ministry at five Kilometres from Porto Velho. They were dispersed by the comings and goings promoted by the SPI. Some are employed, others are at the Saragana or at the Tubarão/Latundê Indian Areas. There are no studies about these cases.

Macurap, Sakirabiar - Rolim de Moura (Mequens Estuary) Ji-Paraná, Guajará- Mirim, Costa Marques and Colorado They abandoned the Mequens regions frightened by threats from the invaders. Once the demarcation is completed, it is essential to give them the option to return to their own lands.

Arikem - Floresta Nacional do Jamari - Jamari river. With the invasion of the Colonia Rodolfo, created by the SPI, now the town of Ariquemes, the Arikem dispersed. There is a couple living near a waterfall, in lands that were granted to a farmer, a few kilometres from Ariquemes. An

engineer, responsible for the Jamari National Forest, said he had heard of a few families who live there.

Palmelenho, Poruborá - Limoeiro and Porto Murtinho Several surviving families live among the regional people at the borders of the Guaporé Biological Reserve, in Limoeiro. They were visited during the research for this work. A detailed study of their situation is necessary. Apparently, they were expelled, by IBDF workers, from lands provided for them by Rondon, in 1915.

Jaboti/Aiuru/Wayoro - Seringal dos Quintões They are in an inactive rubber forest, close to Rolim de Moura do Guaporé. The rubber explorer sold his deed to a farmer, who wishes to banish them from a place called Serrinha. In this region land value has risen due to the Alta Floresta road. To avoid hostilities, FUNAI transferred part of these Indians to the Guaporé Estuary, instead of protecting their rights.

Orouari, Oroin - Guajará-Mirim, Seringais Parati and São Luis Some Orouari are living in a neighbourhood of Guajará-Mirim. The Oroin, living in this area, are the survivors of the massacre that took place in 1963 at the source of the Pacaas Novas river. One of the survivors, was working as a maid, for the Bennesby family in Brasília. They can now be reintegrated on their lands, which were interdicted with the Uru Eu Wau Wau Indian Area, once the invaders are removed.

Coinciding areas ex-IBDF/IBAMA-FUNAI

There are isolated Indians, and a Tupari village, the Palhal, in the Guaporé Biological Reserve. The Pacaas Novas National Park is inhabited, around the mountain range, by the Uru Eu Wau Wau, who guarantee the area, in an agreement with IBDF, according to the interdiction decree. There are some dispersed families in the Jamari National Forest and the Gavião have a village and rubber plantations in the Jaru Biological Reserve.

Despite some common points of interest, the two Institutions, work as though they were two different governments, with conflicting objectives, and are highly competitive. IBAMA alleges that the Indians become predators, after the contact with the white men. FUNAI alleges that IBAMA interferes with indigenous rights of full usufruct. Half truths. There are structural problems. IBAMA is more a bureaucratic agency to authorize deforestation than a preservation institution. FUNAI is an institution for the protection of Indians, but ends up protecting the colonizers, due to its lack of indigenous policies, and to economic, military and political pressure.

Weak institutions, results of a rarefied social, environmental and humanitarian conscience. The truth is, that the indigenous areas are, by the Indians Statute, by the Forest Code and by force of law, areas of

permanent protection. The indigenous usufruct does not imply the alienation of the natural resources for commercial purposes, but are destined for the survival of a millenarian way of life. IBAMA must restrain the logging companies, not the Indians. The preservation theorists of the IBAMA offices in Brasília, will not easily find in the Amazon, the ecological niches of their dreams. In most cases, these areas are defended by the isolated Indians. In view of the speed of deforestation, it would be indispensable that these institutions, preferably reformed, or extinct, make place for new institutions of another nature and orientation, with joint action for the defence of the preservation areas, of the inhabited areas with a self-supporting economy, and of sanctuaries, which also require opportune and necessary defense.

Protection Program for the Defence of the Guaporé and Mamoré Valley

It is important, in any case, that the guarantees to the Indians and the environment be implemented before the start of construction of any kind in the proximity of their lands. The uncontrollable colonization rush should not permit that BRs-421, 425 and 429 be paved before the implementation of a program of legal guarantees to the Indians lands, and a health system for the communities.

Such a program should cover many subjects. This is not the theme of this work. Only as an indication, it should provide the identification of the isolated groups; full legal demarcation guarantees; health prevention care; defense of their cultural autonomy; an anthropological survey of the dislodged, with differentiated measures; ethnical and historical study of the indigenous presence in Rondônia, and about internal colonialism; linguistic study of all the areas; a convention of Funai/Ibama/-Rondônia Government for the sustainable protection management and alternative economic means, among others. In case the government intended to be bound by such recommendations, the plan would only be viable if it would be a precondition of the construction projects with the complete implementation of the preventive measures.

Postponing Road Paving: An alternative to unplanned development

Postponing paving the BR-429 is urgent, as well as the possibility of directing the colonization to other regions of Rondônia, where the social and environmental consequences would be less crucial than in the Guaporé and Mamoré Valleys.

Extractive reserves; A plan for the development of the Guaporé and Mamoré must precede the highway and not be conditioned by it. There is a plan under way at Seplan-RO, The Plan for Agriculture, Cattle Raising and Forests. It is important to make it compatible with the paving. Particularly, in the proposals for the creation of extractive

reserves for rubber tappers and Brazil nut harvesters. The fact is, that Brazil imports 60% of its rubber needs, and the nuts are products of high export value. Therefore, it is important to make good use of natural resources, assuring their renewable character. Such a plan must be appropriate to the economic and environmental macro-zoning of the State and with a definition for the long term use of the Guaporé and Mamoré natural resources. IAMA has already identified 35 rubber tappers areas in Rondônia.

The idea, that roads bring development should be reviewed, its objectives must be discussed and the procedures adjusted to suit. No study has been made about the use of the Guaporé, Mamoré rivers and their tributaries, as means of transportation, and so forth. The antithesis of this would be the repetition of the predatory experiences, which are now pushed as far as to the Bolivian frontier.

The paving of BR-429, without an adequate preservation plan and without taking into account its social and environmental consequences, plus the absence of clear goals for the utilization of the Guaporé and Mamoré region, turns out to be another sad victory for the rush for immediate development.

6. PMACI; Acre's Turn

BR-364 is now being paved up to Rio Branco. The paving, on the stretch between Porto Velho and Rio Branco was preceded by many discussions to avoid the negative experience of the Cuiabá-Porto Velho stretch, which occurred despite the corrective measures tried by Polonoroeste. There were two conflicting points of view, about how to minimise the impact on the environment, as well as on the Indian communities. From the start, the Polonoroeste Indigenous and Environment Component Evaluation Staff, defended the thesis that, demarcation measures, the protection of the Indians health and of their lands and the environment, must precede the road, especially its paving. This point of view, results from the accumulated experiences from the Transamazônica highway, or even, from the Noroeste Railroad, in the beginning of the century.

Nevertheless, the Brazilian government, sensitive to pressure from interests directed to the exploitation of Acre, seduced by the possibility of inaugurating a large scale work, as soon as possible, and supported by BID's decision to finance the work, opted for beginning the paving and, at the same time, take measures to protect the environment and the indigenous communities. Therefore, PMACI I (BID) was created, with BID's tolerant stance. Simultaneously, PMACI II (World Bank/Seplan) was created covering Acre, Rondônia and southern Amazonas. This means not limiting the impact prevention to just the roadsides, but considering every possible interference.

The World Bank limited its financing to studies, which were not concluded, due to the interference of immediate interests, who wanted the road at any cost and as quickly as possible. This PMACI II, financed by the residual resources from Polonoroeste, had the feature of presaging a more comprehensive zoning of the road's impact and the corrective effects necessary for indigenous areas, rubber latex extractors and the environment. There was resistance on the part of the military, contrary to such a far reaching program, which would affect frontier areas, even though the zoning worked with public interest information and was conducted by Brazilian consultants and technicians.

At one point, BID suspended the road's financing, despite its ambiguous position about the impact on the Indians. Even reducing the

agreed area to 50 Kilometres from the road, the nearest indigenous areas were not totally regulated. Afterwards, BID reversed its opinion and continued to finance it, despite the absence of compatible social and environmental measures. The World Bank chose not to be involved with the road, due to the weakness of the previous studies, and the lack of protective zoning measures.

A first balance, made in February, 1987, by FUNAI, IPEA, SUDECO and WB, showed that in relation to the Indians of the nine areas to be demarcated in 1986, only one actually was. This considerable delay by PMACI did not interfere with the paving which continued, at full speed. Involving contractors, whose independent planning charts permit a high risk that the work be completed without the implementation of the simultaneous measures, in a repetition of the Polonoroeste distortions. Nevertheless, all the indigenous areas will be violently harmed by BR-364, in Acre particularly, when it will advance toward Cruzeiro do Sul.

PMACI shows that it is impossible to guarantee speed to an indigenous or environmental component, when the main work planning chart, stimulated by more powerful interests, is not conditioned by it. That is why it is essential that the guarantee of protection to Indian health and territory, the forests and to the extraction workers, must be given before any public or private enterprise is implemented in their proximity. Moreover: the implementation of the social and environmental guarantees must condition and bind the beginning of an impact work. There is also the question of the definition of the range which, definitely cannot be limited to the area surrounding the road, but must consider all the accesses and the interlinking that it may bring, including fluvial routes. This Polonoroeste lesson, unfortunately, was not incorporated in the PMACI, due to the weak and scarce information available to the environmental movements.

BR-364 and the Mine which Victimized the Kaxarari

The Kaxarari lands are located partly in Amazonas State and partly in Rondônia. Since the beginning of the indigenous component of the Polonoroeste Program, their area has been programmed for regulation. INCRA advised FUNAI to quickly proceed with the demarcation, before the implementation of the Marmelo agrarian project, then being studied. With the government decision to go on with the paving of BR-364 to Rio Branco, and the PMACI, a speedy approval was expected. There is no known obstacle to prevent the demarcation and regulation. There is one unoccupied title deed in the area, which can easily be exchanged for another in the Marmelo project, by a FUNAI-INCRA agreement. There is also one rubber latex extractor who can be resettled.

This indecision in regularizing the area permitted the invasion of a quarry to supply stone for the road, which was opened inside the area by the Mendes Jr. construction company, one of the companies which are building the Porto-Velho-Rio Branco stretch. The mine blocked the Indians main river and polluted it. According to CIMI, however, deaths were caused by malaria, due to the deforestation and flooding. All the Indians' rubber and Brazil nut plantations were destroyed by the water pollution. The construction company tried an agreement with the Indians, intending to pay them ridiculous indemnities, manipulating FUNAI employees. Finally, the Indians expelled the quarry workers, and abandoned the place. However, the river remained interrupted and no corrective measure was taken.

The Kaxarari example shows how the PMACI, besides committing the same conceptual mistakes as Polonoroeste, has even less corrective capability. The Indians have the right to an enormous indemnity, but until now, the importance of the quarry's environmental impact was not established and they do not have any legal assistance. The lack of foresight about the impact is so striking in that the construction company took upon itself to destroy the Indians natural resources and nothing was done about it. And it must be noted that the quarry was meant to supply stone for BR-364, in the stretch financed by BID. There is also the sordid excuse, by the construction firm, that there had been a demarcation error and that the quarry was situated outside the Indian area, thereby trying to evade responsibility.

The Indian Areas in Acre await Regularization

It has not been possible, in the course of this work, to update a study on the Acre situation, with a field survey and a documentary review. But the simple reading of a chart about the Indian lands situation in 1988, produced by the "Superintendência de Assuntos Fundiários" (a FUNAI department related to the soil and landed property), reveals important indicators. Despite the responsibility undertaken by PMACI, the Indian communities situation remains, for the most part, without a solution. Of the 27 Indian areas in Acre, only five are partially and legally assured, that is, respectively registered in the Public Register and at the Union Patrimony Service (SPU): Kaxinawa do Rio Humaitá, Kaxinawá do Rio Jordao, Kulina do Rio Envira, Mamoadate and Rio Gregorio. Even these area must be cleared of non-Indian occupants. There is one invader in the Rio Gregorio and six among the Kaxinawa do Rio Humaitá.

There is another area registered in the Public Register, the Kaxinawa da Colônia Vinte e Sete, but it has not been registered at the SPU, and awaits a presidential decree to secure indigenous usufruct. Five other areas - Campinas, Igarapé do Caucho, Katukina/Kaxinawa de Nova

Olinda and Nukini, are demarcated, the last is awaiting the decree, and none of the five are registered in the Public Register and SPU. Twelve other identified areas are awaiting decrees, demarcation and registration: Alto Rio Purus, Alto Tarauacá/Arara, Jaminawá/Arara, Jaminawá/Igarapé Preto, Kampa do Rio Amonea, Kampa do Rio Envira, Kaxinawá do Rio Breu, Kulina do Igarapé do Pau, Poyanawa and Xinane. There are three areas, not yet identified: Igarapé Anjo, Kaxinawá Praia do Paracanã, Recreio I and Timbauba.

FUNAI recognizes the presence of 137 invaders in Indian areas in Acre State, although the chart does not qualify them. The colonization in the state is quite old. Many occupations occurred decades ago, though consolidating acquired rights is not impossible, with adequate planning, to resettle the few people who have certain rights to the land. Paying indemnity to the really dispossessed, for the improvement on the land, so that, they may start again, on an acceptable level. However, because of the existence of speculation and exploitation in indemnification processes, which are onerous to the public coffers, a very competent, case by case, study is recommended.

CEDI/PETI charts, show the same ill defined situation (1990:15). None of the 24 areas in Acre State have been legally regularized and registered, they are all still awaiting PMACI and its vague promises. Nine have had their boundaries determined, 11 have been interdicted, 3 identified and one is without any provision. In five years of PMACI, nothing new has been done for the Indians.

BR-364 in Southern Amazonas and Northern Rondônia

In the first demarcation of the impact of paving BR-364,- the Porto Velho-Rio Branco stretch, PMACI II planned to extend it to the frontier, in a macro-zoning concept, trying to forecast what would happen to the unprotected Indian areas in southern Amazonas. Corrective plans would be provided in the northern and western areas of Rondônia, also affected by the Rio Branco stretch.

At first sight, the measures may seem excessively cautious. But the example of the Cuiabá- Porto Velho stretch, shows that the Indian areas of the Lábrea and Humaitá region were harmed, without any preventive or corrective measures. This southern Amazonas region turned to Porto Velho as an economic centre, due to its distance from Manaus. Neither did PMACI consider the indirect impact of the paving on the northern and western areas of Rondônia, despite the paving planned for BR-425, linking it to the Rio Branco stretch of BR-364, stimulating occupation over several areas in Rondônia, such as the Karitiana, Karipuna and those of the Mamoré; Lage, Ribeirão, Pacaas Nova, Rio Negro Ocaia and Guaporé.

This shows the difficulty of defining an impact area. To prevent negative effects on Indian areas, the guidelines for the definition must consider the communication roads, springing from the trunk-road, such as secondary roads, fluvial routes and the growth of precarious air strips for gold mining.

PMACI represents a regression in the face of Polonoroeste. Although the mistakes about the impact concept are common to both, Polonoroeste had a much better corrective capability than PMACI, which may still be improved. PMACI, does not count with an independent and thorough evaluation as did Polonoroeste, weakening its corrective capacity. PMACI creates illusions, including in the minds of unprepared environmentalists, to whom statements are sufficient without confirming their efficiency locally. Despite the world wide attention given to the rubber tappers, after the murder of Chico Mendes, their situation is not being adequately solved by the PMACI and there are few effectively protected extractive areas.

Frontiers, Indians and National Security

One of the obstacles to the full legal rights of the Indian areas in Acre, Guaporé, Mamoré and Rondônia, as well as in all the Amazon, is the fact that they are situated along the frontiers. The military concept of frontier is 150 Kilometres towards the interior. Since Brazil does not foresee important conflicts, the military occupy themselves with other subjects, such as the environmental and indigenous issues, that should be outside their competence. In the sequel to the former regime, there are military segments, even at high levels, which fancy the Indians as guerrilla candidates, as smugglers, liberation warriors and in other suspicious futuristic scenarios. Some military, close to the mining companies, established an enormous and disproportionate frontier area, where they hamper any demarcation effort, even in cases of obvious ancestral lands, such as the Mequens, Pacaas Novas, or the Yanomami.

They mix up the Brazilian Indians, who are hunters and harvesters, forest tribal groups, with Basque minorities in Spain and the Catholics in Northern Ireland, also ethnic minorities but articulated by social organizations, different from the forest tribal groups, usually reduced in numbers to one or two huts, incapable of promoting civil war. These military ignore other forms of treatment for ethnic minorities, through democratic ways, such as the Saami in Scandinavia and minorities in China, which have their own space in the People's Congress, although it does not work too well, as in the case of Tibet. This military group is not used to listening to anthropologists, political scientists, nor the Indian leadership. Might they have heard of the complex consensus system of Switzerland, Belgium or Holland? They use their powerful and available

means, including the full spectrum of the information community, to hinder or retard the regularization of Indian lands in the frontier areas, even when they are only a few dozen survivors.

It is an urgent necessity to open discussions and make clear to this part of the Armed Forces, that there is a possibility of uniting the national interest with that of the minorities by democratic means. One has to stop treating them as police cases. Nothing hinders the army, the air force or navy, to open watch posts on the frontiers, coinciding with the demarcated Indian areas, as long as they leave to the specialists, and above all to the Indians, the inter-ethnic relations and do not interfere in tribal life. This is a relevant question, since the regularization of Indian lands is the pressing necessity, and prior to the paving of the roads, if we want to avoid a wild-west situation. On the contrary, the armed forces should be carrying out the pending social work, after the, now forgotten, example of Rondon. It could be helping in the dislodgement of invaders and in the demarcation, as they have done in the past.

The Sarney government was able to have a short period of autonomy from the military in its indigenous policies, but ended up governed by them. The Collor government also tried a relatively independent military policy for the Amazon, but ended up yielding. Of course, it is the role of the armed forces to watch the frontiers, to choose strategic watch posts, to keep the Brazilian geographic limits consolidated in peace and free from invasions.

However, in the last five years, some high ranking officers elected themselves as experts in ecosystems, in indigenous affairs, in soil and forest issues, zoning, and so forth. The most worrying is their intolerant posture, where difference of opinion is considered "treason", and other figures of empty rhetoric, which only keep the issues away from important segments of civil society and from the scientific community, who can contribute with their knowledge. The result is that they are led by a small group of interests, the only ones they talk to.

The Collor government planned to give to the Secretaries of Science and Technology and of the Environment, without any loss of prestige to the armed forces and to their constitutional responsibilities, the pertinent tasks of treating the Amazon questions. If this had taken place, maybe we would have had a more adequate treatment, starting from a consensus created by the creative diversity of civil society and not only, by the visions of restricted circles, that do not always follow the high interests attributed to them.

The Brazilian construction and mining companies have proved very competent, inside and outside the country, which is very positive. But this does not exempt them or the government from generating public policies, through democratic means and continuously improved, instead

of following the conglomerates' immediate interests which impose themselves upon society as a whole.

To avoid such practices in the future, it would be an advantage to the nation, to society as a whole, to Latin-American integration, to the use of the Amazon resources, and the protection of its populations, that the National Congress and the civil society be called to a discussion and to reach a consensus.

7. The Brazilian Road to the Pacific

The debate about roads in the Amazon has as one of the most important issues the discussion about the road connecting Brazil to Peru, which would give Brazil a land access to the Pacific, and give Peru an access to the Atlantic. This highway has been discussed by a commission appointed by the two countries. Its project has apparently been postponed, due to the adverse reaction it caused, shared inclusively by the Brazilian Secretary for the Environment, José Lutzenberger.

This qualified reaction, occurred during a SBPC (Brazilian Society for the Advancement of Science), in July, 1990, in Porto Alegre, where several researchers showed the risks of the construction, if carried out without previous measures.

The opposition by anthropologists, geographers, other scientists and environmentalists, in its present stage, enrages the "development at any cost" lobby, which has been losing their serenity and objectivity in their arguments. The first step toward a definition of parameters in this debate, would be a demonstration by the Brazilian and Peruvian governments of their capacity for corrective measures in the large scale projects already in progress in the region. There should be a concrete answer to the questions proposed by previous experiences, such as BR-364, the Indian issue, the rubber tappers and environmental protection. Obviously, Brazil and Peru need and have the right to adequate communications. The question is the how, to whom, at what price, with what consequences and with which previous measures.

Previous and Corrective Measures in Current, Large Scale Projects in Brazil and Peru

In the Brazilian case, it is important to introduce a wide range of corrective measures in BR-364, which is the first part of the Pacific road. An outlet to the Pacific will increase traffic even more on the Brazilian side. The highway has been considered singly, isolated from previously built stretches. It would be impossible to disconnect the Rio Branco

stretch to the Pacific, from the Cuiabá-Porto Velho-Rio Branco stretch. There are important drawbacks there.

With reference to the Indians, for example, it is worth highlighting: delays in demarcations in Acre, the reversal of the decree that protected the Uru Eu Wau Wau (RO), which provided a protection area for the Indians and the environment, now exposed to invasions; unprotected isolated groups, in Mato Grosso and in the Guaporé area; encouragement to invaders in the Karipuna and Mequens areas and in Aripuanã Park; the Kaxarari in Rondônia, victims of a granite quarry, opened for the road, which caused deaths by water pollution; the lack of regularization of the extractive reserves, and many other issues.

In the Peruvian case, it is also necessary to review previous experiences, in a corrective sense, in cases of special projects around the Carretera Marginal, such as: Jaen-San, Ignacio-Bagua, Alto Mayo, Huallaga Central and, Bajo Mayo, Alto Huallaga, Pichis-Palcazu-Pachitea, Oxapampa, Satipo-Chanchamayo, Madre de Dios and Ucayali-Chontayacu-Purus. Such analysis must give particular attention to the situation of the indigenous communities, to the environment and its adequate use.

In the case of the Pacific Highway, there is the possibility to act differently, learning from past experiences. It is vital that the prior measures be taken long before the beginning of any major work, clearly preceding the building work, without subterfuge or false compatibility of calendars, which are aimed to disguise the actual building, relegating to a secondary plane the adequate use of natural resources and the rights of minorities, which should be first and foremost in the orientation of public policies in the Amazon.

A time limit can be set for these measures to be planned and taken. Such measures, however, must condition the beginning of the work, that is, when the paving is started. The Indian and extractive areas, the forest reserves, the renewable use of the natural resources, must already be implemented, or the building will not begin. Only by strictly stating this on the planning charts, will it be possible to avoid the repetition of antecedents, such as in Brazil with Polonoroeste and PMACI.

There is also a growing preoccupation about environmental legislation. The present Brazilian Constitution has advanced considerably on this theme. An analysis of the Peruvian environmental legislation must be made, even in comparison with the Brazilian, particularly in relation to forest resources, deforestation, tax-exemptions, environmental impact, ecological crimes, and the relation of the traditional populations and the adequate use of resources.

Clarification of Peru-Brazil-Japan Interests

This is a key question not very well explained in the discussions about the road. The demands of this trade can determine different consequences in the occupation of the areas and risks resulting from the specialization for the market, all of which calls for deeper analysis. Much is talked about grain exports to the Orient, to Japan in particular. The road would mean a profit of US\$100 dollars per metric ton of grains, shortening by 9.000 Kilometres the Brazilian route to the Orient. "The Brazilian "cerrados" would have a great capacity for over-production" (ESP,10/28/1990 and Globo Rural 10/90). But what would the consequences of this monoculture for export have on the quality of life of the Brazilian population? What would be its limits?

In the mean time, no reference is made of the need for wood in Japan, China and all of the Orient. With the current devastation, the last tropical reserves of the region would be condemned. Preventive measures are not discussed in depth. On the contrary, the defenders of the immediate construction of the road, angrily accuse the environmentalists of defending the American grain exports, to the detriment of the Brazilian potential in the market. But will the Brazilian people really gain from those possible 400 trucks of soy beans, per day, directed to the Orient? What will be the impact of allocating millions of hectares to export production and the concentration of landed property, in a country like Brazil, where the majority of people are poorer than the people of Colombia or Paraguay? What is the gain for the local people? What are the guarantees of renewability of resources, particularly of wood, the coveted Amazon potential?

Interviewed by Sur Magazine of Cuzco and asked about the impact of the integration road with Brazil, José del Maestro, President of the Madre de Dios Defence Front, answered:

"This project may still be realized, but with equal conditions. We cannot let a road, paved or not, mortgage our natural resources. We all know what the Brazilian intentions are. We are neighbours of a brother country, Bolivia, with which we can share almost the same economic structure, but not with Brazil, which is a hegemonic country".

For an equitable treatment, the interviewed proposed plans for industrialization and the utilization of natural resources, besides regional autonomy for Madre de Dios and added:

"The problem is that we are consumers of what Brazil produces, but Brazil does not consume anything we have. We maintain that this great contradiction must

be overcome through a preferential action from the Peruvian government on the problems of Madre de Dios".

This preoccupation is quite prevalent in the region. It is most important that clear answers be given. That the consequences of the opening of an important road network be previously studied, in the interchange between the two countries. Some indications have been made, but not enough for predictions. It is certain that Brazil and Peru can gain in a well structured partnership, but probably not, when improvising. The constitution of the European Community took ten years to improve itself. Latin American integration is also inevitable, for geographic and cultural reasons, however, it needs answers to these doubts, even when some supporters of immediate development discard them as unfounded.

There are a few answers which refer to the possibility of Peru exporting mineral products to Brazil, mainly fertilizers and gas. These alternatives must be measured, as well as the consequences to Brazil and Peru, with the possibilities of access to the markets of the Orient and to the west coast of North America.

There are also financial obstacles. Brazil and Peru are going through a delicate economic situation, with important international debts. Japan, is not in a position to finance this enterprise, for diplomatic reasons, without the solidarity of Europe and the United States. For this it would need the guarantee of environmental protection for the local populations, according to international conventions, the ever stricter norms from the EEC, World Bank, BIRD and other multi or bilateral financial agencies. A repetition of what happened in Rondônia, would create serious international opposition, as has been occurring with BIRD in Acre, and in the recent past, with the World Bank and Polonoroeste.

On the other hand, as was said in the beginning: Why a highway? What is the interaction with the other transport possibilities in use in that region? What is the role of the traditional populations and the natural resources in such plans?

The Indians of Northeastern Bolivia and the Highway

Bolivia is one of the easiest ways to connect Brazil to Peru, but this would imply difficult, tri-lateral negotiations. Difficult, but not impossible. For the geo-politics of this region it is important to maintain various, multilateral contacts within this triangle. It is necessary to reach agreements, at least between Brazil and Bolivia, and between Peru and Bolivia. These contacts have already been started, with BIRD's support, in the Amazon Pact negotiations.

A road that crosses Vila Assis and Iñapari, towards Puerto Maldonado and Puerto Ilo, runs along the Brazil-Bolivia and Peru-Bolivia borders, on a parallel line, dozens of Kilometres long. Even if perilous, the road crosses Madre de Dios department, and has 6 exits with bridges between Peru and Bolivia. These two countries have already studied their integration in this region, in the recent past. On the Bolivian side, there is another precarious road, reaching the south of the country, along the border.

In any case, a highway of such importance, will certainly attract all kinds of regional activities, through the rivers, improvised road branches, timber merchants, mining and agrarian concerns, or through the initiative of Bolivian towns. Therefore, it is of the utmost importance to consider northwestern Bolivia as a road impact area.

A solution, which has been suggested, is to make a polygon in the area, comprising northwestern Bolivia, Brazil, by Basileia, Cobija, and by Peru, from Cobija to Iberia or Puerto Maldonado. this solution would bring the advantage of permitting the integration of the three countries, even if multiple bilateral negotiations are needed. It will impose the environmental zoning of northwestern Bolivia, through its government, clarified with the neighbouring countries, lessening the tensions in the region.

The consequences of a paved road in the neighbouring countries is inevitable. In the centre of the issue, is again the increase of land values, the environmental questions, the use of natural resources, the Indian communities of the forests and the local riverine populations.

This reality calls for detailed planning, even if the fundamental negotiations were held bilaterally. Again, it is an obligation, that the planning begins from the whole of the fluvial basins involved.

In the Brazilian case, the initiative of bilateral negotiation and cooperation, is very important, in view of the tensions in that region, which go back many decades. There is no advantage in prolonging them, since the frontiers are stable.

The current Bolivia-Peru initiative is highly positive for this integration, through the BID "Support Program for the Integration of the Bolivia-Peru Frontier, Project for Integral Rubber Utilization". The concrete cooperation for the adequate use of the natural resources, at least conceptually, is making more progress between Bolivia and Peru than in the Acre/Madre de Dios case. This fact is due to the small loan from BID for this purpose, US\$500.000. The great gap in the project, since the planners and executors were not interviewed, is the lack of a provision for the establishment of extractive reserves, to guarantee the adequate use in the long run. There are references to a guarantee of about 100 hectares per family, but not how it will be implemented, and rubber forest trails are not preserved with settlers lots.

The above project intends to reach about 1000 rubber tappers on the Peruvian side, in Tahuamaru, Iberia, Iñapari, San Lorenzo and Alerta. The intention is to pass from production to primary transformation of the product and partially industrialize the region through better interaction between technical professionals and producers, and the creation of bi-national companies. It seems that the project has faced some problems caused by institutional difficulties. For example, the vehicles that were provided, 40 motorcycles and 10 automobiles, were out of work for lack of fuel or maintenance. The aim is to grow 350.000 rubber plant seedlings, planting, experimentally, 500 hectares, to reach a production of 400.000 kilograms by the eighth year.

The project would initially involve 300 rubber latex extractors, replacing rubber plants, from 1 to 1.5 hectares in each of their lots. It would also involve 3 or 4 existing rubber lamination industries from the Tahuamanu region, responsible for 0.22% of the national production. The plan seems to ignore the possibility of crowding along the existing roads and the importance of supporting the rubber production as a community enterprise.

The Ese-eja are the best example of the connections and the far-reaching effects upon the Bolivian northwestern populations that will come with the Brazil-Peru highway integration, because they live on both sides of the Bolivia-Peru frontier. They have not absorbed the idea of boundaries with the neighbouring States. They are like their ancestral tradition of using the river Madre de Dios all the way to its estuary in the Beni river.

The Indian groups of the Bolivia-Peru frontier may suffer interferences from the Brazil-Peru highway. In the most probable alternative, it will run along northwestern Bolivia, with the impact reaching the north through an expansion of BR-429 and 425, jeopardizing cross-border rivers such as the, Guaporé and Mamoré, described before: 1) Yaminawa, Pano linguistic group, along the Bolivian side of the Acre river 2) Ese eja, Takana linguistic group, along both sides of the Madre de Dios river 3) Tacana, Takana linguistic group, at mid-course of the Beni river. 4) Quechua, Quechua linguistic group, at the rise of the river Beni. 5) Aymara, Aymara linguistic group, around lake Titicaca. (Source: Ethno-linguistic Map of Bolivia - Instituto Nacional de Antropología -La Paz)

7.1 Alternatives of Design, Towns, Forests, Plateau, Seashore

The truth is that the exit by Assis Brasil-Iñapari-Puerto Ilo, is less harmful to the environment and to the Indian communities, than the initiative first proposed by the Acre State government, which would cross all the northwest of that state and a larger section of the Peruvian Amazon, through Pucallpa up to Callao. This second alternative, going by Cruzeiro do Sul, would jeopardize the whole Acre State and it is still more disastrous to the southern part of the Amazonas State in Brazil. This has been the Brazilian option since the end of World War II, and it is the worst. However, this fact does not exclude the need for a deep analysis about the intermixed transportation issues and about the previous measures for the social and environmental issues, which should pre-condition its planning chart. There are different alternative routes for the Peruvian interior, but none of them consider the issues above.

In the alternative of a polygon design to Cuzco, for example, there are several underestimated issues. There are two important Brazilian contractors interested in this work: Mendes Jr., which is well connected in Acre, and Odebrecht, which has already done several public projects in Peru. In such a large scale work, various other construction companies would, in some way, be involved.

Contradictions in the Peruvian Region

Cuzco and Puno dispute the highway, they both hope that it will cross their regions. Peru is in the process of defining regions, and Madre de Dios district is linked to the Inca region, with Cuzco as its capital. However, there is great resentment in Madre de Dios against Cuzco, which has always been the go-between in Lima-Madre de Dios relations. Puno also wants Madre de Dios to belong to its region, believing that, with the paved road, the relations between the two departments would become a priority.

Madre de Dios may request a plebiscite to try to become independent from Cuzco. Legislation provides for one more region. Lima is another candidate to become an independent region, thus superseding Madre de Dios' claim, since it counts with stronger political influence. The average opinion in the region is in favour of autonomy for Madre de Dios.

The resentments against Cuzco are quite important, but the feelings against Lima are very strong and definite. In February, 1990, there was a two day general strike in Madre de Dios district, against the federal administration. Almost all activities were paralysed, including commerce; the streets were filled with people, and the political parties were united at election time, which was surprising. The core of the movement was

their claim for an improved water and electricity supply, and a road to Puerto Maldonado, and a protest against the lack of attention given to that area. Now the question is, whether Madre de Dios will be better treated by Cuzco, now a more autonomous region in relation to Lima. There is another question to be asked: How is the Inca region treating the Indian, the forests and the environmental issues.

According to a resolution of the Fenamad Sixth Congress, it was considered important that it was recognized as the true representative organization for the native communities of the region, including Madre de Dios, Kcosñipata, Paucartamo and Cuzco. It will participate in the Regional Assembly with two representatives, who were not elected by direct votes, to represent professional associations and civil society. Its presence is provided by the Region Creation Law and Regional Electoral Law. It can be expected, that the Forest Indians, a minority, will be better heard, but it is not certain since they will be only two, among dozens of representatives of the absolute majority, the Quechua. Fenamad wishes Manu, Koonsipata, Paucartambo and Cuzco to be a sub-region, at least, inside the Inca region.

They protest because the Indians from the La Convencion Forest of Cuzco, did not obtain a particular representation in the Inca Regional Assembly, specially the Machiguenga and Piro, represented by Feconayy, Ceconama and Comaru. They request a better representation for Madre de Dios, particularly the Agrarian Federation and the Federation for Human Settlements.

The representative and administrative decentralization, permits a more direct dialogue with the authorities, but it involves more powerful local interests. Therefore, it is not yet clear, how the Indian and environmental questions will be represented in the regional government. This theme is the crucial point in the planning and implementation of a environmental and social program destined for the indigenous communities, rubber tappers and Brazil nut harvesters.

At least part of the opinion of Madre de Dios insists on autonomy. In an article published by Sur Magazine from the Centro Bartolome de Las Casas, of Cuzco, anthropologist Thomas Moore reminds that, " The Defence Front for the Interests of Madre de Dios, for the best part of a decade, has been demanding more and more autonomy, and the end of internal colonialism". He believes that there are no historically, economically, administratively or culturally integrated areas between Madre de Dios and Cuzco, or Puno, and even less geographic unity, as required by the law, to constitute a region: "today, at the end of 1989, they maintain an extractive-self-interested, internal colonialism, with Madre de Dios at the periphery, dominated by the financial owners, who accumulate in Cuzco, Arequipa and Lima".(1/1990)

The president of the quoted Defense Front states in an interview, that if the road is built, a Madre de Dios region must be created. He doubts that the Inca region would mean progress for Madre de Dios. He reasons that, an autonomous regional government was always desired in the region, but, recognizes that they have not yet elaborated a clear and definite development program (Sur,7/1989,pg 11)

These contradictions indicate that, an adequate plan must provide efficient action at the central, regional and local levels, eventually, giving privilege to the local.

The detailed follow up to the autonomy that Madre de Dios wants in the reorganizing process, is what may show the chances of autonomous reserves for the forest communities.

Ethnic War

This is a very serious question in the internal Peruvian reality, which was not considered with the close attention it deserves. The civil war is localized in three departments, with repercussions in others and in the capital, and may spread to neighbouring countries. Until now, this question has been treated as regional, political-ideological, class, democratic, military divergencies, and so forth. But there is a bias, which has not been mentioned: the ethnic issue. How can Peru create a social consensus, without admitting its condition as a multi-ethnic, multi-cultural and multi-lingual country?

To make the mountain people, of great cultural and demographic importance feel that they are represented in society and in government, it is essential that national languages be used on television, at least in the regional channels, in the universities, in the press, and that the traditional languages are not treated as less important than Spanish which was imposed by colonization.

The theme is not restricted to linguistic diversity, there are different sets of customs, ways of seeing the world, culture. This diversity is not receiving the right of full expression. In various route alternatives, this question is pertinent. The interference is real, at any point of the territory, since it reaches society as a whole. Regionalism intended to attenuate the internal colonialism imposed by Lima over other regions. However, it did not deal with ethnic diversity, nor with the democratization of the local power. Solutions must be found for this serious national question in Peru, which will not be solved militarily. There are conflicts in Puno and Cuzco, and in the proximity of Madre de Dios.

Dry Road, a Road for All Seasons

It is said that paving an existing road would be less harmful than opening a new one through the virgin forest, as in the case of the Transamazônica. This statement, is only partly correct. BR-364, for example, is the paving with some route corrections of the former BR-29, so it already existed. Nonetheless, the impact was significant, as is evident.

There is a great difference, in socio-environmental terms, between a road for all seasons, with intense traffic, perpetuated by paving, and a dry one. The paved one creates around it a great urbanizing impulse and an acceleration of speculation that the other does not.

There are only 30 to 60 kilometres missing to make possible the proposed road through San Gaban. So the existing road is only a part of the one to be constructed. It is also important to predict the impact of the inevitable polygons, such as the ones of the alternative stretch Puerto-Maldonado-Cuzco, now impassable for many months of the year. During the rainy season, the present road to Brazil cannot be used. Only the first 100 kilometres can be utilized, therefore, the paved road will facilitate a wider and more effective occupation.

It is estimated that the occupation along the road is, in Acre, about 10km. and, in Madre de Dios, about 3km. There is no doubt that the paving will create land speculation and wider deforestation. As it is, the road is advancing 4km. per year, with the scarce Peruvian resources. Therefore, in the short term, it will only be constructed with the participation of Brazilian and foreign resources, accumulating external debts.

The Quince Mil-Iñambari is not maintained during the rainy season, since there is no adequate drainage. It is badly kept, and needs bridges and a major effort to make it firm. The problems of the secondary roads is well represented by the Shintuya situation, where there is commerce and a port inside an Indian village, which is less like an Indian community than a market, thus beginning a new town with the resulting alcoholism and diseases. The road branches must avoid community and preservation areas.

A previous study of the impact of roads passing through the communities is indispensable. The problem already exists in Shintuya. The main road network cannot be discussed separate from its irregular branches. This involves Cordemad and Corporacion Cusco employees, who, as part of the Inca region mentality, have promised to give support with heavy machinery and with the maintenance of the Manu regional road, from which they take out timber and victuals.(El Sol, Cuzco,5/3/1990). The same article informs that a state of emergency declaration was requested from the President of the Republic for the

Cuzco - Shintuya highway. All branches must be planned and be compatible with the Indian and extractive preservation areas.

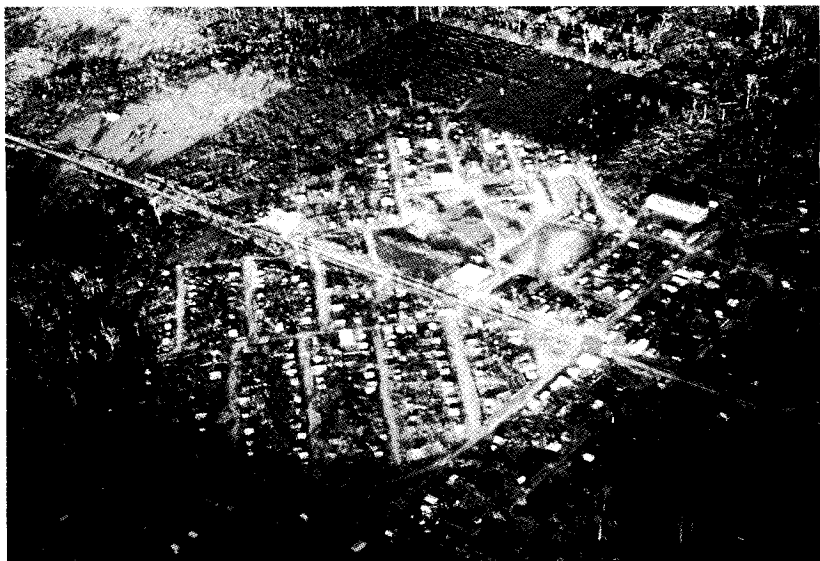
Forest, Plateau and Seashore

There are three studies to be made, no matter which alternative is chosen. Up to now the Peruvian Amazon forest has been discussed more often, as shown by the media and the better informed, international pressure groups. The Madre de Dios region has been considered in a precarious and dangerous integrated development project, which was made in the framework of the bilateral commission. However, the whole of the project cannot be ignored.

Nowadays, any plan for other branches must consider the social-environmental point of view. Peru has a great and rich diversity in every regard. To cross it, starting from Brazil, means to travel across the forest to the seashore. The diversity of the mountain species is as important as the forest ones. In the plateau region, for example, there is a centre of one of the world's major camel species. The ecosystem in this region is also fragile and of definite importance to the local population, which also have lived there for thousands of years and are of a complex ethnic diversity. Among others, there are grave erosion problems on the slopes. One of the interviewed people, reminded the example of the llama, vicuña, alpaca, guzana, etc. These also constitute important economical and sustenance resources. The vicuña skins can reach US\$500 dollars per pound. There is a great diversity of ovines. The alpaca which is important in Puno, is getting competition from Aotearoa (New Zealand), where there is a herd of about 15.000. Juliaca, a centre of middle size industries, which had reached a degree of relative economical development, now has serious market problems.

There is a migration tendency toward Madre de Dios. The Peruvian public policies tend to involve the highway in a project for stimulated migration, which is the same mistake made in the beginning of the century by Brazilian authorities. What should be done, is to analyse the reasons of migration and what are the local conditions that generate urbanization explosions.

These regions also become prone to great increases of property values along a heavily trafficked road. The impact of the road must be pre-estimated, in its passage through communities and ethnic groups which may be seriously disturbed, and who may become marginalized in the urban scene. This cannot be called development. In other points of the route, priority must be given to the people who live there, principally to the peasants. A road may cause many resettlements, which must be known beforehand, and previous planning measures must be indicated and started before commencing construction. There is a risk of



The highways, out of the centres of colonization, create new cities.

going through stable communities, which have reached an acceptable quality of life.

There is a disseminated illusion that the soil is fertile in the forests, which is not true for the most part of the Amazon. Everything contradicts the supposed advantages of migration to this region. In the Brazilian case it was caused by the excessive concentration of landed property in northern Paraná, western São Paulo and Espírito Santo.

The effort should be, initially, to give an answer to the need to keep the people settled where they are. Once they are moved, by a mistaken public policy, they will tend to swell the cities explosively, as is already occurring in Puerto Maldonado and Juliaca. A man in the city costs much more than one in agriculture, and the second is indispensable to the first, and the reverse is not always true.

The seaboard is a question apart and, up till now, has not received adequate attention. The creation of a large port for export and import, such as is being planned for Puerto Ilo, one of the largest on the Latin American Pacific coast, will not be implemented without serious consequences to the coastal ecosystems. A port, for example, must have a special impact evaluation.

It is worth mentioning the network of the other stretches of the possible route, which must be thoroughly studied, particularly the

polygon near Cuzco, that, even existing precariously, will bring an impact to the populations and the environment, in all its length.

Archaeology and National Monuments

These are other determinant questions in large impact projects. There is very little reflection on this theme in road building. For instance, if there will be a paved polygon towards Cuzco, utilizing the present road, how would it interfere with the great Peruvian national monuments of world-wide importance? What is their importance to Madre de Dios? Some of the branches will be built through them, or nearby? Are there studies or maps?

Lake Titicaca

This is another delicate problem, since the road passage will bring an estimated increase of traffic of about 400 trucks per day through the city of Puno, stimulating tourism and accelerating urbanization and other consequences. What are the specifics of the lake ecosystem? What is the lake's relation with the city, in terms of supply and basic sanitation? What are the appropriate protection measures? Does Puno have a socio-environmental and urbanization plan? There are indigenous people living by the lake, which has been turned into a tourism object, what measures have been taken? The lake has great bio-diversity, such as the unique giant frogs, what would be the consequences for them? Is there petroleum in the lake? So a road demands prior and alternative measures, such as detour away from Puno.

Drugs traffic

There are coca plantations in Cuzco and Puno and, apparently, on the Manu river sources, on the eastern slopes. This question deserves preventive measures before a large scale project, such as the Pacific Highway, and special treatment.

Roads, Creators of Cities and Large Scale Projects

The Amazon road networks have become, without exception, creators of unplanned, precarious urbanization. Even when the intention was to promote rural development, the result was perverse. Two thirds of Rondônia's population, within the last decade, live in the fastest growing cities in Brazil. Cities, where the rivers turned into sewers, with no basic sanitation, with serious energy and urbanization problems, to sum up, a terrible quality of life. Acceptable environmental planning must consider the cities that will be created or enlarged disproportionately. In the Polonoroeste case, these urban centres grew enormously, becoming

support centres of rural development and seats of local governments. Dusty, without trees, wild-west style towns, where even the architecture is improper for the region. In the case of an important road crossing Madre de Dios, small centres, like Iberia, Iñapari and others, will face a demographic growth, which must be planned in socio-environmental terms.

Puerto Maldonado is a good example. It is the capital of the Madre de Dios department. A middle sized city, vulnerable to floods and drought, a gold mining city, inadequately and spontaneously urbanized. Its growth is the result of the opening of the Urcos-Quincemil-Puerto Maldonado, in 1965, which does not operate in all seasons, but was enough to create serious, unforeseen problems. It suffers from the lack of maintenance of the road, lack of telephones, of potable water, electricity and of irregular and disorganized air transport, etc.

In 1984, when the road was opened toward Acre, the population was estimated to be about 15.000. Today it is around 25.000, plus the transient population during the dry season, which may reach 50.000, around the gold mining. The consequence is the increase of marginalization and crime. Electricity is rationed to save fuel, and drinking water comes from subterranean wells, due to the pollution of the rivers. In 1988, a new suction pump was installed, which does not function due to technical errors, and the result is rationing and protests.

Puerto Maldonado is one of most expensive cities in Peru. At the same time it pays small scale farmers very badly, and the Indians around it pay very dearly for other regions' products, from food to industrialized items. Predicting an urbanization, implies planning a system of supply. Beside sewage, the rivers are polluted by mercury and until now, the magnitude of its effects has not been examined. It is this situation that makes the Madre de Dios Defense Front organize a yearly general protest strike.

Stimulating the creation of new cities of explosive growth, copied from the so called first world, dependent on technology and materials that do not exist in the region is certainly not the right concept of development. This link, between the cities and the environment, must begin with the existing cities, particularly where the majority of the population is concentrated, where the recovery of an acceptable quality of life can be tried. This theme demands planning and pilot experiences. In the first three years they would be implemented for the local population, before the beginning of any project, and as a pre-condition for it.

San Gaban hydroelectric potential

This project, which is considered inoffensive in Peru, calls for an impact study, since it will among other consequences, cut one of the sources of the Amazon river, that should be seriously evaluated. It has close connections to the Pacific Highway.

Mining

Uranium in Puno, petroleum in Madre de Dios, gold mining, gas, all these mineral reserves must be evaluated, plotted in on maps, its consequences and its own rules must be considered, especially, when they reach Indian, preservation and extractive areas. Because all these activities will be stimulated by the road.

7.2 Migration, Inter-Ethnic Conflicts, Gold Mining; the Colonization front in Madre de Dios

Migration, from Puno, Cuzco, Arequipa and Tacna, already in progress, would be greatly expanded toward Madre de Dios with the opening of the central highway network. Conflict of a cultural and ethnic nature, which may occur are underestimated. Today, with the few colonization centres already settled, the situation is not relaxed.

There are reports, from the natives of Madre de Dios, about the problems with migrants coming from Puno, who have not yet taken off their traditional woollen caps, appropriate for the cold weather of the mountains, in spite of the heat in their new Amazonian habitat. They live in the forest, as though they were still in the mountains. This is a detail, but it illustrates the risks of transmigration. Some of them depend on the natives for survival, hunting for them. The newcomers despise the natives, whom they consider less capable. This culture shock is like a barrel of powder, in the confrontation between settlers and natives. It is important to survey the existing situation, before planning the new intended settlements.

The argument that migration is already in progress and that the projects would tend to organize it, is also not acceptable. For the simple reason that, the present migration, including Bolivians and Brazilians, is directed to gold mining and not to agriculture. The migrant gold miners are recruited from the urbanized populations, already deprived of their cultural characteristics. They would hardly be adequate for permanent rural settlements. As to the agricultural migration from Puno or Cuzco, it would be sufficient to analyse the failure of past colonization experiences in Madre de Dios, to verify that these attempts should not be repeated without wide ranging, corrective measures.

Prior planning must be directed to the questions of inter-cultural impact before promoting transmigration plans, such as have been, inadvertently, proposed for Madre de Dios. The control of the migration process, now already in progress, stimulated mainly by gold mining will not be effective through incentive programs for large scale migration and before an organization of space and guarantees to the present settlers. The Peruvian government intended to introduce 300 thousand migrants, which would be extremely serious to the present residents, particularly to the Indians and rubber tappers. In Rondônia, except for some fertile spots, what grew was gold mining. As these development projects for Madre de Dios have been thought out until now, they are mere repetitions of the Polonoroeste Program, and promise to repeat the same grave consequences to the Indians, the rubber tappers and the environment.

Colonization

The PDRI project, as it has been presented in the proposals of the bilateral commission, contains a traditional agricultural vision, as opposed to the diversified, extractive use of the forests, with the traditional populations in mind, as would be more suitable. There are numerous forest species not considered in the studies. All PDRI have included are coffee, cocoa and cattle. The answer is in the dozens of failed Peruvian experiences of the same sort. Nevertheless, the Proyecto Rural Integral Masuco/San Gaban, is planned to settle, initially, 8.000 people, in an area of 100.000 hectares, without a previous analysis of a possible population already residing there.

There are also mentions of projects for Iñapari-Iberia, proposed for the settlement of 20.000 people, on 200.000 hectares. In past settlement projects, such as the Madre de Dios, 1.000.000 hectares were considered, but it was finally settled on 200.000, chosen in view of the soil quality. The failure has been attributed to lack of credit for the settlers, but, the truth is that there are no deep, qualitative and quantitative studies, of what happened.

The actual number of families that are effectively settled on these parcels of land vary according to the speaker. Some say that in the Primavera project there are today only 35, others say that there are 17 families, which came from Puno. In the Chinilla project, with migrants from Arequipa, of 300 lots of 60 hectares, apparently only a few dozen families remained. The same sort of report, although imprecise, is heard about the Noya project. There are projects, with technical support and cooperation from Canada, with 200 granted lots, in Tambopata and Tahuamanu and 500 more to be granted. Apparently, they occupy the lots and after cutting all the wood, they leave them, like in Rondônia.

Some native community leaders tell for example, of a project in a place called Lagarto, where, of a settlement of 200 families from Puno, only 30 remain where there was a petroleum survey camp.

There is also spontaneous colonization in Alto Madre de Dios, gold mining and timber activities in the Cuzco forests, next to the border of Madre de Dios, in a place called Itanania.

There is also colonization in Ceja de Selva, with migrants from Puno, in the Sandia region, in direction of Puerto Maldonado, with six coffee cooperatives. In the Infierno community, 60 hectares were invaded by Lucio Bocangel and his cattle, and there are other facts of this sort.

A serious study of the projects already tried in the Peruvian Amazon must be made, to properly discuss the viability of the new settlements which are much highlighted nowadays. Invaders of indigenous areas must be quantified and qualified for the resettlement of the poorest ones. It will not be acceptable to begin a new settlement process, even one that would give priority to the Indian communities, to extractive activities and the environment, if these prior experiences are not followed up.

Such is the case of the PDRI Acre/Madre de Dios, under discussion in the bilateral commission. The Acre part was still not quite specified in the beginning of 1980. For Madre de Dios, 300.000 new settlements were foreseen. This strategy must be changed toward the elaboration of a new project, fundamentally different from the present. The project under discussion deserves a detailed analysis of its components and of its concept, which is, as a whole, a repetition of Polonoroeste.

It contains generic statements of protection to the Indians and the environment, but as before, they are treated as parallel and separate ingredients, in the middle of great projects, such as highways, colonization, ports, free ports, paving, local roads, cattle raising, minerals, etc. It would be better if, before any initiative, it were put into work a program geared to sustainable development, oriented by the appropriate use of natural resources, directed initially to the existing populations and situations.

Clarification of landed property and speculation

Contrary to the prevailing mentality in the countries which have inherited a cartel system of land speculation, the clarification of the space of landed property is the motor of regional development. Take, for example, post-war Japan and Taiwan. All first world countries have clarified to whom each acre belongs and to what it is destined. The social cost of postponed and prolonged conflicts, is much greater than planning and clarification.

This effort is indispensable to public policies. How can a government plan projects while facing this confusing state of affairs, with the

overlapping of titles and documents, giving an opening to the indemnification industry? Recently a big company was installed, with government authorization, on lands occupied by hundreds of people on the Peruvian border with Brazil. As can be seen, speculation begins before the highway.

A confused landed property situation is not in the interests of agriculture, nor to mining or to public projects, such as roads and hydroelectric plants. What interests the small and middle size producers is a clear title to what belongs to them, it is what encourages them to plant and produce, knowing they will harvest and that they can leave it to their heirs. In the case of traditional cultures, land is still more important. Not used to the artificial city life, which is swollen by unequal development.

To the indigenous communities, land is vital to survival in every sense. The previous clarification of landed property also avoids social conflicts. The opposite is what occurs in southern Pará, in Tocantins and in northern Goiás where, the overlapping of legal title deeds involves enormous sums of money in resettlements, law suits and funerals.

The clarification of landed property demands that the regularization and demarcation of lands of the indigenous communities, such as the rubber tappers and Brazil nut harvesters, be carried out prior to the attribution of any other title deeds, colonization or investment authorization.

In Madre de Dios there are already some speculation investments on landed property, of an unproductive and predatory nature, which are only awaiting the inevitable increase of land prices that will come with the highway.

The Peruvian landed property legislation seems more flexible than the Brazilian, although the means to guarantee the rights of the native or extractive communities, have not been consolidated.

The first task is to establish the extent of landed property, followed by cartography covering the deeds and titles, of the conflicts and of the present state of deforestation.

A more precise knowledge of the landed property picture permits a more adaptable approach to migration dynamics and a better definition of property rights. Principally in a region where the ecosystems peculiarities impose the utilization of extensive areas. In the Brazilian example, INCRA promoted clearances of ground by fire, which could be claimed as improvements, in case of expropriation. The definition of landed property rights should include a requirement of responsible conservation. Today the orientation is toward the adequate and sustainable management of natural resources. A management plan of renewability from the indigenous and extractive communities, for

example, can only be planned once their survival space is clearly guaranteed.

The landed property speculation started even before the projects. As happened before, landed property speculation, anticipates all the large scale projects in the Amazon, with the same predatory characteristics of the Brazilian west, without any adequate control. We did not have access to any specific study on this subject, which is also a necessity. Several people made reference to the process as having accelerated lately. They mentioned, for example, the Ganaderia Tropical, which claims 295.000 hectares in the Rio de las Piedras and Muymanu region, exactly in an important region for extractive activities.

There were also references, among others, to the Central American Service, linked to the Somoza group; to the Proyeto Azucar Alcohol Selva, of the Reggiane company, which in 1984, applied to the Italian technical cooperation, for financing.

The most flagrant of all, is the case of the Ganaderia Santa Clara, which occupied, with authorization, 8.247 hectares, has already cut all the wood from 1.500 hectares, intends to devastate 14.000 more, claims 200.000 or intends to occupy them. The company belonged to the Zanatti group, linked to Fawcett, the largest private aviation company in Peru. It is installed at the border between Brazil and Peru, in Vila Assis, exactly where a bi-national reserve was planned, and in the proximity of the highway. In the area already devastated there were eight families and in the authorized part there are 27, all of them with their property rights ignored. What are the control implements that the program will introduce to prevent such actions?

There is also talk about the Cooperative for Agrarian Production HUANDO (CAPH), which already has 1.200 deforested hectares and intends to go back in the dry season to proceed with the project. In Iñapari, Senator Luis Caceres Velasques, would be installed with 20.000 hectares in the Tahuamanu; Carlos Zacanini claims 20.000 hectares in the Quincemil region and in Salvacion, another company claims 200.000 hectares for timber cutting purposes.

The tendency to landed property concentration is evident, even before the paving of the highway has started. In numerous cases the process is started with logging, to form pastures. Would this be the development process to be implanted? And what is the real landed property situation of Madre de Dios? These and other initiatives exist. How are they going to be controlled? How are the local populations going to be assured of their rights and the usufruct of the natural resources?

Madre de Dios: incentives, gold and wood

It is one of the less well known regions of Peru and even the available maps are poor. Before the road is started, there is much to be learnt about Tambopata, about northern Puno, which also has forests, about northern Madre de Dios where there are isolated Indians. Thoughts abound as to what can be produced for the outside, and not about the real situation of the populations, their quality of life, the knowledge of their bio-diversity, which is known to be one of the richest on the planet.

Gold extraction would represent the largest income to the department, something like US\$ 2.2 million dollars. Next would be tourism, with US\$ 1.6 million dollars, then wood with US\$1.2 million dollars followed by cattle, with US\$ 0.7 million. What would Brazil nuts and rubber represent in this picture? Would the income be based on fiscal incentives? Would it be worth altering this situation? A great part of this production apparently, does not leave anything, or very little, to the region. How could this be changed? Wood, for instance, how many species are utilized? Is there reforestation and management?

The action of the logging companies

Timber is taken from Puerto Maldonado to Lima and Arequipa, via Cuzco. There is timber spread permanently, along the river. Another part is taken by road in the dry season, also toward other Peruvian centres. More recently Brazilian companies have arrived, via Iberia. Probably, the same which have been cutting wood, all the way from northern Paraná, via Rondônia. Wood has been taken to the internal and external markets, even by plane, in the rainy season, but only cedar, caoba (mahogany) and espino.

More than 10 trucks loaded with timber depart from the Parque del Manu region, and from the vicinity of the Shintuya and Diamante indigenous areas. There are more than 1000 requests for logging concessions, in the Madre de Dios region, and numerous saw mills. One, for example, already has 50.000 hectares and is asking for more, in Rio de las Piedras, a relatively unexplored region.

Among many issues, the market must be known and evaluated in detail as well as labour relations, explored regions, saw mills, commerce, destination and reforestation.

The logging companies have been in the everyday life of the native communities of longer contact, those where the hard woods are not depleted. The prices are ridiculous.

They discount enormous amounts for alleged cracks or rot, cheating the Indians. There is no replacing of these trees or reforestation in any of the communities, neither by the government, nor by the predators, not even management plans.

At least three communities, Shintuya, Palotoa and Santa Rosa, still have some timber. The logging companies are only interested in the best timber, caoba (mahogany), fine cedar and tornillo. Between Shintuya and Santa Rosa, at the sources of the Alto Madre de Dios river, the natives tell of how the logging companies, shamelessly, show contracts for other areas, gotten by corruption. In Sanone, they say there was a mestizo teacher, selling the Indians wood to his students.

Fenamad advised in the XIII AIDESEP Congress that, "the forest lands are not totally arable and are bad for cattle raising. It is known that the destruction of our forests without a management plan is a grave danger to our people. This is why we are presenting our preoccupation with Zanatti's intention of introducing extensive cattle raising in the Department, destroying about 30.000 hectares".

Indigenous communities and gold mining

Most of the communities territories are being invaded by gold miners from Boca Iñambari to the middle course of the Madre de Dios. There are serious health problems, specific to river gold mining, usually rheumatism. The gold miners are now coming to the Malinowsky. There are at least six indigenous communities living precariously from gold mining: Boca Iñambari, San José Karene, Puerto Luz, Barranco Chico, Villa Santiago and El Pilar. They suffer from the cold, in the rainy season, do not save money and are not trained to deal with mercury. Conflicts are common, as are physical and legal aggressions.

The VI Fenamad Congress (1988), mentions in the cases of Puerto Arturo, Arazaire de Villa Santiago, Barranco Chico and Boca Iñambari, the following gold miners, as aggressors: Juan Barriga Visa, Guillermo y Quintin Oispe Huayllani, Mateo Mollo, Luis Bejar Huallpa and Alfredo Perez Trancoso. This last one, with his dredging machines and tractors, is mentioned as the most violent and he is still unpunished. This situation is due to the lack of legal control, to the irresponsible concessions granted by the Mining Ministry. The Carisa company is mining in Villa Santiago. There are also gold miners in Barranco Chico. Three companies invaded the lands of the Tres Ilhas community. Carisa is also in Barranco Chico and Rio Puquiri.

In Barranco Chico some gold miners appeared, begging to stay there. The wife of the indigenous community's president was won over and let them stay. They brought more people and mining grew, then they started to request titles, they wanted to form a mixed mountain community, instead of the original indigenous one. They even wanted to build a school. "They came begging and now are warriors". They brought the police, which was met with arrows. The Indians had the solidarity of Villa Santiago/Fenamad. They removed parts from their motors, threw

tools away, paralysing Carisa, which has a priority mining permit, and made an agreement with the Losada company.

Villa Santiago was titled in 1975. In 1978, a man from Cuzco, Kiske Guallane, requested land for mining from the Ministry. The community protested administratively against the concession. Like King Salomon, they authorized both the invader and the Indians. In the most recent attack they launched boats against the adversary, almost killing the natives, who organized sabotage resistance. The Indians report that the invader found another place in the vicinity and started a court case against them.

In Boca del Ñambari, the Amaracaire, with the support of the Puerto Luz community, faced Trancoso and his tractor, which was devastating part of the Indian land. He has requested four concessions named as: Jesus, Rosita, Silva and Amaracaire. About 20% of the Boca Ñambari territory is invaded by settlers and mestizos. They generate constant conflicts. The invaders have more resources and workers. There are more than twenty mountain people in the area. Alcoholism is brought in, women do not get food any more, men do not plant, and when the gold is finished they are poor again, they are only temporarily rich now.

In San José del Karene, gold miners killed José Quinke Kamenó, one of the Indians, in a fight. Another conflict occurred with Florencio Mateus, a mine manager, who inherited a deed from his father inside the Indian area and formed a company, without a concession, and his brothers installed motor-pumps in the area, creating conflicts. Shiringayoc, is another example of overlapping of gold mining concessions and of invasion in Indian areas. All the Indians were pushed away from their land by the gold miners and moved to the estuary of the Ishirihue river. Therefore, they are unable to request demarcation, since the gold miners made them leave.

Mining concessions

Fenamad and EORI have fought against the mining "denuncios" or mining permits since 1985. To get one of these permits, nowadays, it is necessary that a request be registered in Cuzco by a leader of the community, to guarantee against the possibility that the Ministry will make concessions to others. Afterwards, there is the deed, the legal classification and a paper, which is very difficult to find outside of Lima. This calls for a lawyer and a mining engineer. An infernal bureaucracy. It would be enough to say that the Indians have priority on their lands. Fenamad presented in 1986 a law project for the native communities mining affairs. In 1988 it protested against the analysis delay by the mining, minerals and Amazon commissions in the Senate. In 1989, they were still waiting, according to a report for the XIII AIDSEP Congress.

The Mining Ministry could simply grant priority to the Indians, as an administrative orientation, while the parliament decides. There is no doubt that mining as a whole, and indigenous mining, in particular, must be an integral part of a socio-environmental plan, before the building of any road or project. Fenamad has been protesting against the treatment that the Banco Mineiro (Mining Bank) has been giving to the indigenous communities. They demand better trade conditions, special business hours to take care of their interests, and better attention, in respect of Article 21 of the Native Communities Law.

Gold mining

The Banco Mineiro was created to stimulate small scale mining, which has existed since the beginning of the century. There were times when it paid more than the international market rates. In 1973, the mining companies, such as Carisa, started to get priority. At this time, the miners started to work for the companies as hired hands. There are conflicts and diseases, yellow fever and others. Exploitation of child workers and small scale miners, besides criminality.

In other words, it is in every way like Rondônia. Three thousand dredgers (boats or barges) came from Colombia and now there are Brazilians coming from the Madeira river, and Bolivians. It seems urgent that the Bank and the environmental institutions intervene with socio-environmental technical assistance. However, the Bank does not pay high enough prices and does not control the production. It deals specifically with the big companies. As far as could be asserted, nothing of this highly predatory activity, at least in the present form, stays in the region, in terms of tax or investments.

Mining activities decrease during the rainy season, moving to the higher parts of the rivers and to smaller rivers, about 100 meters higher, like the Mazuco and Hiaputo regions, with at least eight or ten thousand people involved. Summer is the high season for gold mining, on the banks of the Iñambari and Madre de Dios rivers, with at least fifteen or twenty thousand people involved. With an average of one gram of gold per person/day. They use tractors, "bateias" (bowls for finding and washing gold) and dredgers etc.

There are reports that these young casual workers (18 to 25 years old) are recruited in Cuzco city. The "enganchadores", like the Brazilian "gatos"(middlemen for cheap labour) hire them, promising them an Eldorado. After many hours on perilous roads and boats, they will be fed on boiled manioc and bananas. They transport 100 hand carts full of earth per day to deposits, where the gold powder is sedimented. Their monthly pay is miserable, about five thousand Intis (Sur, 7/1989). They do not even see the gold, since the employer separates it personally, with

mercury. They come back disillusioned. Its a migration process in need of better study.

There are companies holding 100.000 hectares in concessions, the largest employing about 100 people. Aurifera Iñambari, grossed US\$461.335 dollars, in 1988, which represent an important net profit, since the operational expenses were of US\$245.475 dollars, in five months. There other large and middle size companies operating, such as Consorcio Katanga. Texas Golf/Aurifera El Sol and Eldorado, in the Urcos region. Eldorado wants to mine in Valencia Lake. The mining is installed in the southern region of Madre de Dios. They do not sell to Brazil, as has been said in the region. They sell to Lima, and from there, to Miami. As a matter of fact, neither does Brazil control the gold produced under the same conditions.

Some of the centres are Labirinto Island, Colorado river and the basins of the high Madre de Dios and Iñambari. Carisa-Aurifera Iñambari-South American Placers SA, represented by Hans Fleury Wheley, is the largest company, and has Bolivian connections. Carisa is at the Barranco Chico and Puquiri river. Banco Mineiro keeps only 10% of the production of gold, partly deriving from the Cariza and Azorzo groups.

There are no plans for the recovery of the degraded areas, nor any plan for the prevention of the dangerous effects of mercury. Banco Mineiro could control the gold production through the retort, they would have to pay market prices, offer gold refining services, quality analysis and offer retorts to the customers. It is a grave mistake that no preventive measures have been taken about mercury. The retort, which is an instrument and a technique to re-use mercury economically and to control pollution, was never even introduced or planned,. There is no training and no capital. According to a geologist, resident in the area, a retort would cost 8 or 10 dollars in the UN projects. It could be introduced by the Banco Mineiro, while at the same time enabling them to set the gold price by its quality.

It is true, that Brazil just started a process to deter this grave ecological damage. Nevertheless, the Madre de Dios river will continue to carry mercury toward Bolivia and Brazil and into the Amazon river, aggravating the existing problem on the Brazilian side. This question should be taken up as an emergency component, with priority treatment to be given to the Indians, the rubber tappers and the environment, before any road project or settlement. Urgent measures must be taken with reference to the gold market, to the Banco Mineiro, to mercury and its impact on the ichthyc fauna, on fishing, on the miners, on labour relations, on the recuperation of degraded areas and the use of retorts

Fiscal, financial credit and exchange incentives

In Peru, since the 1960's, there is an ambiguous fiscal exemption, for two years, for investments in the Amazon. Zanatti/Fawcett also used highly favourable exchange incentives, according to the press. On this issue, Brazil should rapidly pass on its experience to Peru, in the form of technical cooperation. These incentives were stopped in Brazil, due to the high level of corruption and environmental destruction they caused.

There are no studies about the results of these incentives, not only fiscal, but of financial credit and exchange, in the face of the environmental question and the conflicts between the investors and the native and extractive communities. The revenue from these incentives must be considered and its real socio-economic gains estimated.

In Brazil, studies by Seplan and by the World Bank, showed their predatory and speculative character and the enormous corruption they stimulated. Today it is partially controlled. It is important to examine the role of Confide in this incentive practice. And an analysis must be made of each project, estimating the worth of indirect investment and their results. For the most part, they become only net capital for financial investment and dollar speculation.

7.3 Priority to the Traditional Population and to the Suitable Use of Natural Resources

It is unquestionable that any plan for the development of the Madre de Dios region must consider, first and foremost, the people that are there now. Particularly, the natives of ancient occupation, prior to the European; the survivors of the indigenous forest people, clearly different from the people from the altiplano (highlands).

Secondly, consideration must be given to the descendants of the first migrants from the beginning of the century, the rubber tappers and Brazil nut harvesters who started the creation of the Madre de Dios Department, in 1912. If it is not possible to provide a reasonable quality of life for these people who are there now, why bring in new migrants? Where would they be settled, if the space occupied by those who are there now, is still not clarified?

At first, this may seem like an uncommon moral call, but it is not what it is all about. There is no harm in that relatively new countries review their bungled, external and internal, colonial past. But there are other reasons that must be given the attention they deserve. The first one is of a comparative nature. According to the Madre de Dios Development Coordination (Cordemad), the space utilized up to now is only 1.7% of

the arable lands, 1.2% of the lands suitable for cattle raising and 5.6% of the lands suitable for forests (Sur, Cuzco 7/1989).

To start, it is essential to review these criteria of suitability and use. In Rondônia, INCRA, for example, judged suitable, soils that turned out to be a disaster for the settlers, who believed in the institution's studies. The result of these mistakes is unnecessary deforestation, 35% of the State, and the colonization failure, which intended to settle 300.000 and settled 26.000, at a very high cost. Recent FAO studies concluded that only 7% of the State of Rondônia is really fertile and 50% could be, with the help of expensive fertilizers and correctives. The fertility criterion must be relative to sustainability, as has been shown by recent studies about the Amazon, proving the failure of cattle raising. The settlers that remained, became gold miners, swelled the new cities or went on to devastate the forest of Acre or Roraima.

As to the alleged forest suitability, if only 5.6% is utilized, there would be a 94.4% potential to be explored. It is undeniable that it needs a more precise concept. Does it mean reforestation, with the diversified native species, or simple extraction of centuries old forests for quick profit, without renewability guarantees?

Admitting these questionable estimates as true, it is incredible that only 1.7% of the arable lands have been used; what would the reason be, if Madre de Dios has been inhabited for thousands of years? It is the knowledge that the communities have of the fragility of the soil, and that is why they practice itinerant agriculture, expecting the spontaneous recuperation of the degraded areas. Many indigenous areas were reduced by demarcation.

A deeper study might conclude that there are more occupied land in use than is estimated. It is another form of occupation. On two levels: first, the millenarian and little known one, of the native communities, which should be the starting point. Is it recommended that the planning be started with the resources of ethno science or with the way the natives utilize the natural resources? What kind of resources exist, and for what use?

The second level, is the analysis of the extractive production for the market, begun with the century. The extractive activity proved to be an adequate use of natural resources, since corrective factors were introduced, such as the combination of cultures and densification to guarantee renewability or the effectiveness of gathering or extraction. Maybe, the hoped for revenue is in these products and in these traditional populations, and not in ideas brought in from the outside, such as pastures, which have been failing all over the Amazon, except for the rare fertile spots.

Finally the cost, in the long run, of marginalizing these populations in their own territory, must be estimated. It would be worth observing,

for example, the cost to the Canadian government, with the indigenous people that did not have their lands demarcated, the "no treaty" Indians, marginalized at the edges of the big cities. It involves future public expenses of all sorts: indemnifications, health, education, legal costs, which comparatively will be double the cost of the Indians that kept their lands and their traditional self sufficient ways and quality of life.

Trade, diversification and transformation

In the concept of an alternative to colonization projects, trade must be considered a key point. It was a decisive issue in previous projects and it is a serious problem for the populations of Madre de Dios and in the Amazon, as a whole. There are few and costly, intermediary dealers for the export of Brazil nuts or for rubber latex. Other forest products are rarely utilized. A study of these relations is important. It is generally supposed that the mere building of a road will generate trade, but this is not the case, due to the competitive inter-regional markets and to trade monopolies.

In the same direction and always giving priority to the local population, which should be the first beneficiary, it is indispensable to think of its viability through diversification. There are native communities who combine many things: gold mining, planted fields, extractive activities, fishing and permanent cultures. This is the only way towards adequate usage which will allow the combining of income, regional markets, export and local consumption, in permanent and remunerative conditions. The priority is the producers stabilization to improve their quality of life, and only secondarily, to satisfy the market needs with the surplus, through aggregated revenues and not through concentrating monocultures, as has been imposed, frequently, by mistaken public policies.

A third consideration for a project of this kind, is the products transformation through semi-industrialization and obtaining a better price through added quality. An example is rubber latex, which gets one price after treatment in a small factory and a lower one when in gathered balls. The same happens with Brazil nuts, which undertaking can be more profitable after being treated in small mills.

Interconstitutional Action

A detailed and rigorous analysis of the institutions to be involved is also indispensable. One of the great obstacles to the accomplishment of public policies, is the weak performance of the public institutions, which frequently compete with each other, although working for the same government and for the same purpose. The first step, is to consider how and by whom should put these into practice and if they are able to do

it. Moreover, it must be known in advance which institutions are going to be responsible in the different administration levels, what will be the duties of the federal, regional and local institutions and how they can work together. It is obvious for instance, that many of the personnel, albeit competent, do not know the realities of the regions they are planning for, as is the case in Madre de Dios.

On this theme, the first answer to be given, is which institutions are going to work, before the constructions, on the regularization of indigenous lands, the extractive reserves, the environmental questions related to mining and appropriate use. It is necessary to ascertain the technical capability at the different administrative levels, and make sure that at each level the objective is very clear to the executor, without any ambiguity. The creation of a specialists centre inside the region is indispensable, as well as a continuous and independent evaluation of the executive institutions, as a corrective measure. It is also important for the management, the creation of data banks, documentation centres, a statistics base, consultants, and continuous independent evaluation.

To be effective, this quantification needs a correct socio-economic orientation. For example, in the case of a project, initially made for the traditional communities, it is important to quantify what is produced now, the results of the stimulants to trade, transformation, production, organization, not only for isolated products chosen by the market or by the planner, usually imposed and ineffectual.

A centre for planning, training and monitoring must be situated in Madre de Dios, as an Institution or a University research centre, linked or not, to other large centres, or having agreements with them, according to the discipline, like an advanced campus, but with a great deal of autonomy. Such a centre will be able to keep the programs memories, to produce corrective effects and give technical assistance, voiced with an independent evaluation, with a democratisation of planning, through the beneficiaries organizations, research centres and NGOs.

Credit and sustainable alternatives for the communities

There have been experiences with "achote", a resin, commercially valuable, a private enterprise on 300 hectares, started in 1987, close to Km 32. As well as this initiative, all the other extractive or ecologically sustainable species must have long term studies, looking to diversification, and breaking with colonialism and market specialization.

There are no available deep studies about rubber latex and Brazil nuts, for example, on production, transport, markets, transformation, state intervention, among other factors. There are also few records about fishing resources. About cattle, there are many quantity records, but in

a projection system, and not related to the reality of the soil of Madre de Dios.

While these incentives are being given to companies or to individuals coming from outside Madre de Dios, Fenamad, warned at the XIII AIDSESP Congress: Actually, all governmental conventions and agreements about credit from the Banco Agrario (Agrarian Bank), to the native communities, are not put into effect without very long delays, therefore we present our protest and ask for the necessary measures to be taken, in this respect". A resolution of the Banco Agrario # 3182 of Feb. 2nd/1986, for credit to be given to the indigenous communities at zero cost, or at least at preferential rates, was never put to practice.

Another delicate issue is the deeds certificates, necessary to obtain credit. They should be released by the leaders of the communities to its members, to be utilized for agricultural credit. A new legislation should be studied, in which the relation between the members of a community and their leaders, would be better determined (VI Fenamad Congress). Fenamad adds that the procedures and requirements to get credit are not well resolved, although there is a resolution, # 053-86-EP with a plan for it. The communities also seek to have representatives in the Banco Agrario, in the national management and in other intermediate branches, on the level of Cuzco and Madre de Dios.

The market and Brazil nuts

These nuts are still gathered by seven communities, Palma Real, Barranco Chico, Puerto Arturo, San Jacinto, El Pilar, Infierno and Bajo Piedras. The communities regard the market prices as low, at present, but it is better than the rubber latex prices. The peculiarity of payment with products, ("barracao") the debt is paid against supply, at the rate of 24.000 intis (about one US dollar) per peeled kilogram. They dry them in the sun, soak them overnight, and then they peel them with a small machine. With the skin, the price for a bag of 70 kilograms, discounting the estimates of rot and humidity, is about 1,5 and 3,5 US dollars. The settlers own the best nut grounds, in the forest contracts released by the Ministry of Agriculture, which are renewable every five years, and granted to Puno migrants and former rubber tappers. The justification is that the Indians have plenty of lands, although the density of population is lower in Madre de Dios, 0.4 inhabitant per square Km., therefore, there are more available lands. They think it is odd that the only permanent dweller of the interior, the Indian, make extensive and good use of what they need.

The Brazil nuts are transported by subsidized planes, during the rainy season. The presence of this product as well as the rubber latex is considerable, along the road intended for paving. Starting from Vila

Assis, at Km. 235, rubber latex is dominant; in Alerta, at Km. 155, there are both rubber latex and Brazil nuts; in Manuripe, at Km. 78, Brazil nuts are more common, up to Puerto Maldonado, at Km. 0, according to assessments by environmental scientist Humberto Labarthe.

Rubber tappers and nut harvesters

There are three areas in Madre de Dios: In the first one, where there is rubber latex, 400 families producing approximately 700 Kilos. per year, up to the Huymanu and Manuripe rivers, with 280 registered contracts, which form the frontier to Alerta. From there on, there is an intermediate region, where the Brazil nuts come from Manuripe and Puerto Maldonado. There are 980 contracts in an estimated area of 16.000 square Km. Each family utilizes an average of 1000 hectares, according to the survey by Labarthe, based on the road.

Together, the three nut zones obtain a total of 3000 tons per year, between Puerto Maldonado and Iberia. It is estimated that there are 300 trees per 1000 hectares with one hundred barrels of 65 kg per hectare. One thousand tons are processed in Lima, amounting to three million dollars of business in the port of Callao. And the gatherer makes ten dollars a barrel. Production is approximately 2000 tons of processed Brazil nuts, totally native. They are peeled, dehydrated, and classified in Lima, getting, up to two dollars per kilogram. The barrels with 75 kg. of Brazil nuts in the shell, with possible humidity, are worth 1,10 dollars per kg., and without the shell, they get up to 1,40 dollars per kg., in the port. Six companies control 80% of production. The most important are: Proteza, Sol and Dorado. They do not pay taxes, and all they do is dehydrate and classify.

Expanding the estimates to the Parihamanu and Piedras rivers, the Brazil nut region could reach 30.000 square Km.. Estimates by a botanist from Cuzco University, Persio Nunes, on the occurrence of *Bertholletia Excelsa* (Brazil nuts) in the Madre de Dios area, is the following: in the Manu river region: thirteen per hectare; in the Mavila/Puerto Maldonado region: thirteen to fifteen per hectare, already reduced by fires and deforestation; and in the Pampas de Heath, two per hectare.

The undermining of rubber latex

Migrants spoil the trees, they dry out, and later the wind breaks them. The natives say that they should be left to rest and to recover. The Alerta community still makes rubber latex. The price is controlled by the government, which gives priority to imports, and does not take account of inflation when it establishes its ridiculous, monopolized prices. After six months, in March, 1990, the price went up to US\$ 1,7 per kg. in balls and to US\$ 2,00, processed. Approximately 99% of the Peruvian rubber

requirements are imported, the national production is reduced to almost zero. In March the Peruvian government increased the price to 36.800 intis per kg. of semi-industrialized rubber sheets, (about 2,5 dollars), and 24.500 intis per kg. in balls, (about 1.5 dollars). A month before, it was paying US\$ 0,10 cents per kg. (3000 intis), a lot less than the international price of US 1.60 for unprocessed rubber, which reaches from five to six dollars in the importing countries.

It is important to change this sort of control by Banco Agrario, because it is concerned with importation and not with the rubber extractors, even though the price is set by the Ministry of Agriculture, a way out must be examined. The difficult competition from Malaysia, which produces 40.000 kg/hectare, is forcing more compact rubber plantations. Even without incentives, the Tahauamu region produces 200.000 kg per year. More than 1% of the Peruvian production. The country needs from ten to twelve million kg. per year. At least 500 to 600 tons could easily be produced locally

According to Banco Agrario, Peru has a total of 4.500.000 rubber trees, and 2.500.000 in Madre de Dios. It is estimated that each tree produces, from five to six litres, that would represent two kg. of rubber sheets per tree. Each rubber trail with 140 trees would produce 1000 kg. The leading buyers, which represent 80% of the demand, are B.F. Goodrich and Goodyear. In the last 10 years, demand increased 3.6% and tends to grow.

As to the rubber trees, the assessment made by Persio Nunes, of Cuzco University, states that there would be: Iberia, with 10 per/hectare; Manu, one per hectare; Pampas del Heath, one per hectare. There is a great incidence of Castilla Ulei, "caucho" or "tumba" and Hevea called "acre fino".

Manioc, bananas and other crops

Palma Real, for example, supplies manioc, bananas and many other products, such as corn and rice to Puerto Maldonado. They get ridiculous prices for them. Many ask tourists for alms at the station. Even school supplies are given by tourists, says an indigenist. Communities of more frequent contact, speaking Spanish, such as Infierno, supply every produce that Puerto Maldonado needs, corn, Brazil nuts, wood, cattle etc. They are the most important suppliers, but do not get enough in terms of money to meet their needs, particularly, medical care. This is also the case of El Pilar, one of the Dominican's "Babels", created by the Catholic Church and engaged in agriculture and cattle raising since 1948, where families of, Shapivo, Mashiguenga and Ese' eja are mixed together.

The VI Fenamad Congress also pointed to the difficulty of getting a satisfactory commercial price for the Indians products and to the support they need to remove the intermediaries.

The Indian Nations of Madre de Dios and the Highway

In view of the situations stated by the Indians, it is essential to make a detailed balance of the legal rights of the people of the forests and of the ethnic minorities in Peru and in Brazil, before the start of and financing of the so- called Pacific highway. Particularly about the approval of all or part of the resolutions of the last OIT Convention on minorities, and of the UN discussions. With the perspective of the impending paving of the road, it is important to divulge data about the difficult situation of the Indians, as it is partly presented in the chapters above, even starting from a short visit. The road will only bring worse situations.

Ethnic-linguistic classification of the native populations of Madre de Dios and Kcosñipata (Cusco)

This ethnic-linguistic listing was produced by anthropologist Thomas Moore, Director of the Eori Research and Regional Development Promotion Centre, of Puerto Maldonado, by request, to complete this work. We are very grateful to this researcher and his colleagues from Eori, for the great help we received, in this and other important data about Madre de Dios. There are five linguistic groups, and sixteen ethnic origins:

1. Arawak linguistic group.

- a) Iñapari ethnic group: no community found; various families in the Alto Rio de las Piedras area.
- b) Machiguenga ethnic group. Identified communities: El Pilar, Palota-Teparo, Santa Rosa de Huacaria, Shipeteari, Tayakome, Yomibato, a group from the Alto Karena, two groups in the Manu Park.
- c) Piro ethnic group. Identified communities: Belgica, Diamante, Manchinerio del Rio Yacu.

2. Harakmbut linguistic group.

- a) Amarakaeri ethnic group. Identified communities: Boca de Iñambari, Puerto Luz, San José del Karene and Shintuya.
- b) Arasaeri ethnic group. Identified community: Villa Santiago.
- c) Kisambaeri ethnic group. Identified community: none; there were some individuals in Shiringayoc, and are now in Boca Ishiri and in Bajo Pukiri.

- d) Pukieri ethnic group. Identified community: Malinowski, and an extended family in Santa Rosa (km. 141).
- e) Sapiteri ethnic group. Identified community: Bajo Pukiri.
- f) Toyoeri. Identified community: none; one family in Shiringayoc; other, dispersed in Bajo Pukiri and Puerto Maldonado.
- g) Wachipeari ethnic group. Identified communities: Queros, Shintuya and Santa Rosa de Huacaria.

3. *Pano linguistic group*

- a) Amahauaca ethnic groups: Identified community: Boca Pariamanu.
- b) Shipibo- Conibo ethnic group. Identified communities: El Pilar, San Jacinto, Tres Islas.
- c) Yaminahua ethnic group. Identified communities: none known; populations at the Chandless and Yacu rivers.

4. *Quechua linguistic group.*

- a) Kichwa Runa ethnic group. Identified communities: Alerta and Puerto Arturo.

5. *Takana linguistic group.*

- a) Ese-eja ethnic group. Identified communities: El Pilar, Infierno, Palma Real and Sonene.
- b) Tanaka ethnic group. Identified communities: none, some individuals in Puerto Maldonado.

Established titles for the native communities of Madre de Dios and of northern Cuzco and geographical location.

a) Titled 36.1% :

1. Palma Real/ position: Heath river
2. Villa Santiago/ position: mid-course of the Iñambari river.
3. Infierno/ position: near the Tambopata river estuary.
4. Shintuya/ position: Alto Madre de Dios.
5. San José Kerene/ position: near the Karene river estuary.
6. Puerto Luz/ position: sources of the Karene river.
7. Diamante/ position: near the passage of Alto river into the Madre de Dios river, mouth of the Manu river.
8. Boca Iñabari/ position: estuary of the Iñambari river into the Madre de Dios.

9. El Pilar/ position: Madre de Dios river, close to the Rio de las Piedras estuary.
10. Santa Rosa de Huacaria/ position: source of the Alto Rio Madre de Dios; in Cuzco, sources of the Pucopata and Corbon rivers.
11. Puerto Arturo/ position: estuary and left bank of the Rio de las Piedras.
12. Barranco Chico/ position: a tributary of the Karene river.
13. Sonene/ Position: Heath river.

b) Acknowledged, without titles (25%)

1. Queros/ position: sources, right bank of a Karene river tributary.
2. Mashco Piro/ position: left bank of Alto Madre de Dios river.
3. San Jacinto/ position: left bank of the Madre de Dios river.
4. Pukeri/ position: Malinowski river.
5. Bajo Piedras or Boca Pariamanu/ position: estuary of the Parimanu river at the Rio de las Piedras.
6. Shiringayoc/ position: estuaries of the Rio de los Amigos and Madre de Dios river.
7. Palotoa/ position: at the junction of the Palotoa and Alto Madre de Dios rivers.
8. Quebrada Fierro or Iomibato/ position: Alto Manu river.
9. Tayacoma/ position: Manu river.

c) Not acknowledged and without titles

1. Alerta/ position: Muyano river
2. Manchineri/ position: mid-course of the Yacu river.
3. Bélgica or Marinahua/ position: tributary to the Acre river, at the Brazilian border.
4. Yaminahua/ position: mid-course of the Chandless river, at the Brazilian border.
5. Tres Islas/ position: right bank of the Madre de Dios river, close to the mouth of the Tambopata river.
6. Yura/ position: sources of the Alto Manu river and its tributary, Satileta river.
7. Yura/ position: sources of the Alto Manu at Cuzco, border of Madre de Dios.
8. Yura/ position: at the border of Cuzco, Madre de Dios and Ucayali.
9. Sapiteri/ position: tributary of the Kerene right bank
10. Cruz de Mayo or Shipeteari/ position: left bank of the Alto Madre de Dios river.
11. Inaperi/ position: mid-course of the River de las Piedras.
12. Alto Karene/ sources of the Karene river, border of Cuzco.

d) Isolated or not permanently contacted (5.5%)

1. Yura or Naua/ position: sources of the Las Piedras river.
2. Yaminahua/ Position: sources of the Tahamanu river.

e) Dislocated (from their villages) groups.

1. Iñapari/ Alto Rio de las Piedras.
2. Kisambaeri/ Boca del Rio Ishiri and Bajo Pukiri.
3. Tyoeri/ Shiringayoc, Bajo Pukiri and Puerto Maldonado.
4. Yamanahua/Cashpajali, sources of Rio de las Piedras, Alto Tahuamanu, Yacu and Chandless rivers.
5. Takana/ Puerto Maldonado

Synopsis of the indigenous lands of Madre de Dios and Kcosñipata (Cuzco)

Of the 36 known indigenous areas in madre de Dios and in the bordering northern Cuzco, not to mention the dislocated. In a temporary listing, of a first research, it was found that only thirteen are legally secure, that is, 36.1%, although many of them are unsatisfactory, and should be reconsidered. An other nine, 25%, are acknowledged and await titles. Twelve, 33.3% have no legal protection. Finally two, 5.5%, are isolated, which does not exempt the government of the responsibility of protecting them from a distance, since contact is harmful in most cases.

It may be stated irrefutably, that the majority of the indigenous communities of the region in question, 63.9%, do not have a regularized position, and 38.8%, do not count with any regularization initiative. A road cannot be paved without the prior regularization of these areas.

Indigenous population

There is no up-to-date and methodic census for the indigenous population of the region. Perhaps, the 1990 census, will disclose new facts. Another way of keeping a permanent census, is to integrate it to a global action, particularly in an individualized health care, which does not exist at present.

Fenamad estimates that the indigenous communities have about four to six thousand survivors. This list includes data from the Native Communities Directory, organized in 1986, by the Ministry of Agriculture, Agrarian Reform Office for Rural Settlement, including the year they were enroled in that office, with up-dating by a medical doctor, but unfortunately, in only a part of the communities. There may be more up-to-date data, to which we did not have access.

It would be risky, to presume that the indigenous population is of little importance in the region. Even adopting a purely quantitative conception of the demography, which is not suited to the cultural differences, it is important to remember that, of the 45 to 50 thousand inhabitants, 25 thousand are in the capital of the Department. Thousands are in the small towns, such as Iñapari and Iberia. There are close to 20 thousand involved in river gold mining. This means that, except for the gold miners, the native communities of Madre de Dios, constitute the absolute majority of the rural population. It may be the only one to stay, in the long term, after the gold rush; a classic in the Americas conquest of the west.

According to the most recent data available from the Ministry of Agriculture, in 1986, there were 34 native communities enroled in the Cuzco Department; 30 in La Convencion, 2 in Paucartambo, and 2 in Quispicanchis. In Madre de Dios there were 14, 5 in the Manu region and 9 in Tambopata. (1986:10/48).

Data from the Dr. Neptali Cueva Maza, Fenamad/Ametra, about the communities of the Manu region, in 1989. The last four villages are in the Manu National Park.:

	Male	Female	Total
Shyntuia	106	72	178
Polotoa	25	25	50
Shipteari	16	13	29
Diamante	93	83	176
Pakitza	0	3	3
Tayakome	46	61	107
Yomibato	53	54	107
Condeja	22	10	32
Total	365	332	697
%	52.4%	47.6%	100%

	1>	1-5	6-14	15-64	>65	Total	Fert.
Shyntuia	3	30	39	101	5	178	27
Polotoa	1	10	14	24	1	50	12
Shipeteari	1	3	6	19	0	29	6
Diamante	8	29	48	88	3	176	32
Pakitza	0	0	0	3	0	3	2
Tayakome	5	28	20	53	1	107	30
Yamibato	9	18	30	44	6	107	21
Condeja	1	6	9	16	0	32	5

Department: Madre de Dios**Province: Manu**

No.	Name of community	Ethnolinguistic group	River	District	Resolution registration no.	Date	Population	State
1	Barranco Chico	Amarakaeri Sapiteri	Pukiri	Manu	059-84-AG-RAXXIVMD	20.09.84	85	T-57
2	Diamante	Piros y Machiguenga	Madre de Dios	Madre de Dios	044-84-AG-RAXXIV-MD	11.09.84	250	T-86
3	Puerto Luz	Amarakaeri	Colorado (MD)	Madre de Dios	0056-80-DR-AA	27.02.80	230	T-86
4	San Jose de Karene	Amarakaeri	Colorado (MD)	Madre de Dios	R.D.1128-85-DGRA.AR	05.11.85	185	T-86
5	Shintuya	Amarakaeri	Madre de Dios	Madre de Dios	141-OAB-ORAMS-VII-74	04.10.74	173	T-79 T-86

Department: Madre de Dios**Province: Tambopata**

1	Arazaire	Arazaire	Behenquegas	Inambari	152-OAJAF-ORAMS-VII-76	01.10.76	50	T-77
2	Boca de Inambari	Amarakaeri	Inambari	Tambopata	070-84-AG-RAXXIV-MD	29.11.84	250	T-86
3	Bajo Piedras	Amahuaca	Piedras	Las Piedras	061-84-AG-RZXXIV-MD	29.09.84	20	-
4	El Pilar	Shipibo, Conibo, Ese-Ejja, Machiguenga, Arazaire	Madre de Dios	Tambopata	043-84-AG-RAXXIV-MD	11.09.84	64	T-86
5	Infierno	Huarayo	Tambopata	Tambopata	061-OAJAF-ORAMS-VII-76	20.04.76	198	T-76
6	Palma Real	Huarayo	Madre de Dios	Tambopata	137-OAE-ORAMS-VII-76	01.10.74	170	T-76
7	Puerto Arturo	Kiwcha Runa	Madre de Dios	Las Piedras	042-84-AG-RAXXIV-MD	11.09.84	95	-
8	Sorene	Exe'Exa	Heat	Tambopata	067-84-AG-RAXXIV-MD	27.11.84	70	-
9	Shiringayoc	Toyoeri Amahuaca Machiguenga	Madre de Dios	Inambari	060-84-AG-RAXXIV-MD	28.09.84	215	-

Department: Cuzco
Province: La Convención

No.	Name of community	Ethnoling- uistic group	River	District	Resolution registration no:	Date	Popula- tion	Sta- te
1	Alto-Picha	Machiguenga	Picha	Echarte	123-OAE- ORAMS-VII-74	26.09.74	-	-
2	Aviriri	Arahuaca- pre andina	Apurimac	Echarte	386-OAE- ORAMS-X-76	06.02.76	196	-
3	Camana	Machiguenga	Parotori	Echarte	042-OAE-AJAF- ORAMS-VII	08.03.78	150	T-83
4	Camisea	Machiguenga	Camisea	Echarte	131-OAE- ORAMS-VII-74	30.09.74	90	T-84
5	Carpintero	Machiguenga	Urubamba	Echarte	122-OAE- ORAMS-VII-74	27.09.74	114	T-84
6	Cashiriri	Machiguenga	Cahiriri	Echarte	121-OAE- ORAMS-VII-74	26.09.74	40	T-84
7	Chirumbia	Machiguenga	Chirumbia	Echarte	011-OJAF- ORAMS-VII-74	28.01.76	150	T-85
8	Estrella de Alto Sangobatea	Machiguenga	Sangoba- tea	Echarte	0058-80- DRA-AA	27.02.80	160	T-85
9	Gran Shinon- gari	Campa-Asha- ninga	Apurimac	Echarte	0139-80-DR- VIII-H	07.03.80	400	T-83
10	Kitepampani	Machiguenga	Alleni	Echarte	0059-80-DR-AA	27.02.80	95	T-83
11	Koribeni (1)	Machiguenga	Koribeni	Echarte	134-OAE- ORAMS-VII-74	30.09.74	443	T-76
12	Limatambo	Machiguenga	Apurimac	Echarte	566-OAE- ORAMS X	10.12.76	115	T-77
13	Matoriato	Machiguenga	Matoriato	Echarte	234-OAE-AJAF- 77-ORAMS VII	07.11.77	750	T-85
14	Mayapo	Machiguenga	Mayapo	Echarte	041-OAE-AJAF- 78-ORAMS VII	08.03.78	109	T-84
15	Miaria	Piro	Urubamba	Echarte	127-OAE- ORAMS-VII-74	30.09.74	209	T-80
16	Monte Carmelo	Machiguenga	Alto Uru- bamba	Echarte	126-AE-OAJAF- ORAMS-VII-76	04.08.76	230	T-84
17	Nueva Luz	Machiguenga	Paquiria	Echarte	125-OAE- ORAMS-VII-74	30.09.74	180	T-82
18	Nueva Vida	Machiguenga	Urubamba	Echarte	0057-80-DR-AA	27.02.80	75	T-83
19	Nuevo Mundo	Machiguenga	Urumbaba	Echarte	126-OAE- ORAMS-VII-74	30.09.74	155	T-83
20	Otari	Campa Asha- ninga	Otari	Echarte	0066-81-DEA- XVI-ORD-SDRA- /AR	22.04.81	50	T-83

No.	Name of community	Ethnoling- uistic group	River	District	Resolution re- gistration no.	Date	Popu- lation	Sta- te
21	Poyentinari	Machiguenga	Poyentinari	Echarte	120-OAE-ORAMS-VII-74	26.09.74	202	T-84
22	Puerto Huallana	Machigueng a	Picha	Echarte	124-OAE-ORAMS-VII-74	30.09.74	140	T-82
23	Sampantuari (San Mateo)	Campa Asha- ninga	Apurimac	Echarte	385-OAE-ORAMS-X	29.01.76	153	T-82
24	Sanki Rosi	Campa Asha- ninga	Pichari	Echarte	0189-83-DRA- XVIII-DAJ	20.09.83	45	T-86
25	Segakiatto	Machiguenga	Camisea	Echarte	133-OAE-ORAMS-VII-74	30.09.74	180	T-83
26	Sensa	Machiguenga	Urubamba	Echarte	128-OAE-ORAMS-VII-74	30.09.74	69	T-83
27	Shimaa	Machiguenga	Compiros Hiato	Echarte	129-OAE-ORAMS-VII-74	30.09.74	303	T-84
28	Shivankoreri	Machiguenga	Camisea	Echarte	132-OAE-ORAMS-VII-74	30.09.74	107	T-83
29	Ticumpinia	Machiguenga	Ticumpinia	Echarte	119-OAE-ORAMS-VII-74	26.09.74	75	T-84
30	Timpia	Machiguenga	Timpia	Echarte	130-OAE-ORAMS-VII-74	30.09.74	210	T-83

Department: Cuzco
Province: Paucartambo

1	Queros	Amarakaeri (Huachipaire)	Queros	K'osñipata	140-OAE-ORAMS-VII-74	04.10.74	140	-
2	Santa Rosa de Huacaría	Machiguenga Amarakeri	Huacaria y Piñi Piñi	K'osñipata	148-OAJAF-ORAMS-VII-76	22.09.76	140	T-85

Department: Cuzco
Province: Quispicanchis

1	Huacyumbre	Amarakaeri	Huacyum- bre	Quince mil	R.D. 88-8-DR- AA	28.02.80	168	-
2	San Lorenzo	Amarakaeri	Marcapata (MD)	Quince mil	R.D. 100-80- DR-AA	13.03.80	168	-

Standards and practice in the demarcation of indigenous lands

In its sixth Congress, in 1986, Fenamad insisted on making the request for a division in the XXIV Department Unit, of the Ministry of Agriculture of Madre de Dios, which is specialized in titles, expansion of territories, and similar subjects. It demanded the participation of Fenamad and of the involved communities in every step of the process of acknowledgement of their rights. The objective is to avoid mistakes, such as were made in Boca Pariamanu, Sonene, Barranco Chico, Queros and Santa Rosa de Huacaria.

Of the close to one thousand, identified indigenous areas in Peru, 757 are supposed to have "personeria legal" (a private corporation), officially enlisted. This means that they are recognized by the government as such. Madre de Dios is rather underdeveloped in comparison to the Peruvian Amazon, as a whole. It is deplorable that such identification procedures, equivalent to the Brazilian identification, can take place, without the adequate anthropological studies, which is forbidden by Brazilian law.

As to the demarcation process, inclusive in the so called "regularization", in Peru, the man/hectare standard is maintained, 10 to 100 hectare per individual, similar to the system utilized in dispensing lots to settlers. The natural limits are not respected, due to the topographers technical difficulties. The use of natural resources is not, generally, taken into account, or even the ancestral occupation, the old villages, fields in fallow, cemeteries, nor hunting, fishing and harvesting territories. Actually, it is the same system used on the altiplano for the rural communities, where fertile soils are scarce, and the population, incomparably more numerous.

Banco Agrario is responsible for the reparation to the invaders, but in the form of loans, therefore, the community will have to pay for the loss and damages of the improvements that they will have to leave behind, when the lands are registered. This legal procedure requires evaluations by lawyers specialized in indigenous rights. Almost all communities were demarcated with no continuity between their territories, even when the villages are of the same ethnic group. The invaders can stay, if the assembly so condones, and participate in the meetings.

It is an extremely difficult situation, since these are instruments of power which the invaders have over the community, which is not supported by ethnological studies or legal assistance.

The results of demarcation made by high school level technicians, is that the majority of registered communities end up asking for the extension of territories, and are now requesting the creation of forest reserves. However, bureaucracy is extremely slow and most of the requests are forgotten.

In an interview with the directors of Fenamad, Miguel Pesha, from Infierno and Ricardo Casurichi, from El Pilar, emphasized what happened in the Infierno community: only the firm land of the river bank is really productive, up to a distance of 300 metres. The interior part, classified by the government as adequate for forest, agriculture and cattle raising, is really rough and uneven ground, with lakes and swamps. In the rainy season almost all the land is flooded and in the summer, less than half can be utilized. There is a theoretical forest reserve, but by this report the demarcations, already made, of the Madre de Dios communities, urgently require revision, keeping two points in mind: the occupation history and the necessary natural resources so that these communities can rely on an adequate quality of life, according to their culture, to the production for the market and to their way of living also foreseeing their demographic growth.

There are other groups, which have even greater hardships, even with legal acknowledgement, such as the Quechuas Santarosinos, that came from the Napo river in the beginning of the century, to extract rubber latex. Ministry employees, with no ethnological qualifications, want to deny their condition, only because they were transferred from their place, although their occupation of almost one hundred years is prior to any other claims.

The process is extremely bureaucratic and slow: It takes about thirty days for soil classification, this is followed by a report about the forest, then, reports from the Minister and from the Native Communities administration, only then, the assembly or the leader may apply for the definitive registration. The standards are the same applied to the general assembly of the "comuneros", an outlook that is appropriate for the "comuneros" of the plateau and applied to define the rural communities. The result is that the areas are rather reduced, although a person, or a company, may have thousands of hectares, as in the case of the companies mentioned in this work. All that is needed is connections and influence in Lima. The process is foreseen for a maximum of three thousand hectares, like on the plateau. But there, the lands are destined to extended families, and in Madre de Dios, they can shelter entire ethnic groups, forest tribal groups, or the communities of their survivors.

Demarcation is made up of squares and straight lines, which is extremely unfavourable for relations with the neighbours, as well as for securing river borders. As a matter of fact, some demarcations have moved the areas from the river borders, which are their most important resource. Such is the case of Santa Rosa, considered to be one of the largest areas, with 36.806 hectares. However, 14.696 hectares are to be kept as forest reserve, therefore, they have 22.210 hectares, and according to one of their representatives, a good part of the soil is not productive.

Puerto Arturo is another example: a man who had the deed for a Brazil nut plantation, in 1986, because his party won, obtained local support, alleging that they were not Indians. The community representative had to travel three times to Lima to be heard. Finally, in 1988, the Indians got the title, but although it was conceded in June, it was only delivered to the community in August. Nevertheless, the plantation man appealed to the courts and the hearings will be held in Cuzco. The Indians can only count with an NGO EORI lawyer, and no legal or institutional support from the government.

Fenamad publicly asked the Dominican missionaries to remove a man called Edmundo Carpio Estrada, one of the invaders of Shintuya, who was considered dangerous to the identity and to the cultural unity of the community.

Forest reserves and hunting

Through Fenamad, the indigenous communities of Madre de Dios, are demanding the creation of a collective reserve, between Shintuya, San José del Karene, Puerto Luz and Diamante, to be used suitably by them. These lands are not invaded, are historically theirs and they are willing to preserve them. These lands were not included, due to the lack of qualifications of the public employees, who made the demarcation.

Fenamad proposed the creation of common reserves, foreseeing the scarcity of lands in the future, since, in many places, the standard of ten hectares per person was used, not taking population growth in to account. This proposal seems to be in some drawer in the Ministry of Agriculture. In 1988, the sixth congress brought up the subject again, requesting common reserves, with the participation of the communities in the procedures, for : El Pilar, Shintuya, Diamante, Arazaire de Villa Santiago, Palma Real, Infierno, Palotoa-Teparo and Santa Rosa de Huacaria.

During the course of the Fenamad Fifth Congress, in 1987, which took place in Palma Real, they asked the government for more funds and for the creation of a sub- administration for the native communities, in the agrarian area of Madre de Dios. They also asked for the acknowledgement, through the Madre de Dios Special Project, of the Marinaha ethnic groups from the Acre river, in a place called Belgica, of the Kichwa Runa, in Alerta, by the Muymanu river, of the Sapiteri, by the Bajo Pukiri river, of the Yamanahua, by the Alto Piedras, and of the Queros Community, in Cuzco. They also protested against the absence of sufficient and competent technical staff, to confer titles to indigenous lands. In 1987, they complained about the delays of deeds for the following communities: Puerto Arturo, Palotoa-Teparo, Barranco Chico,

Sonene, Shiringayoc, Bajo-Piedras and of the Kugapakori, near the Manu Park.

They also complained that titles already conferred had not yet been registered in the Public Records of Madre de Dios, according to Art.# 5. of DS 003-79-AA. These were the cases of Palma Real, Infierno, Shintuya, Villa Santiago, Puerto Luz, San José de Karene, El Pilar, Boca Iñambari and Diamante. In 1988, at the Sixth Congress, the following communities were still not registered: Palma Real, Arazaire de Villa Santiago, Infierno, Shintuya, El Pilar, Boca Iñambari, Diamante, Puerto Arturo and Barranco Chico.

In the Sixth Congress, Fenamad requested acknowledgement and titles for the following communities: Shipeteari, San Jacinto, Tres Islas, Malinowski, Belgica, Alerta, Machiguenga del Alto Karene, Sipiteri and Kisambaeri of Boca Ishrihue, Mashco Piro and Nauhas. They also requested the completion of the procedures initiated for the Queros(in Paucartambo, Cuzco), Palotoa-Teparo and Boca Tariamano. The last one requested a change of name.

Fenamad is also inquiring about why Article #21 of the Native Community law, which states that the government has to give priority to native communities titles, before state or private companies. And proposes that the Indians organize themselves in a native delegation, for self preservation of their territories.

Isolated groups

The great majority of isolated and not yet contacted groups, live in the north, close to the Brazilian border. In the Ucayali Department, these lands are being recognized as occupied, thanks to the financing of the Danish technical cooperation, an example of the bilateral collaboration in the Purus area, through IWGIA/AIDSESP/COICA. The protection of these territories as forest reserves and shelter for isolated groups avoids serious problems, as were created with the Naua, during a petroleum survey by Shell, and with irregular contacts with lumber jacks, who transmit diseases, which become epidemics, killing many of them.

Fenamad also pointed out, in its report to the XIII AIDSESP Congress, the situation of the isolated Indians, close to the gas region of Camisea and Manu Park. In its Fifth Congress, Fenamad also requested that the Madre de Dios Special Project acknowledge the Yaminahua isolated groups of the Chandlees river and the Manchineri of the Yacu rivers, both at the Brazilian frontier.

According to a rare ONG EORI map of the indigenous communities of Madre de Dios, there are various isolated groups, like the Yura or Naua, by Alto Manu (c) and Salile rivers (d); at the limits of Cuzco,

Ucayali and Madre de Dios (e) and at the sources of Rio de las Piedras (f), six in all.

Indians and preservation Parks

In 1988, during the VI Fenamad Congress, the administration of Manu Park agreed to build a school in Tayakome and to provide furniture for the Tayakome and Yamibato classrooms. The school would be built with funds from the Manu region, with logs that the logging companies throw in the river. It was agreed that the Indians would use motor saws for this purpose, for a short time. It was proposed that a native peoples office be created, with well prepared and conveniently equipped personnel, and Fenamad would participate in the selection. They demanded that the communities be consulted equally about everything that concerned them and integrated with Fenamad in the management of the Park. At Manu Park, even Fenamad requires authorization from the Park management, which urgently needs qualified specialists.

As it has done in previous congresses, Fenamad repeated the demand for the acknowledgment of the "Mashco Piro", Yura or Nahua, Tayakome and Qubrada Fierro ethnic groups, as Native Communités, established in the interior of what is now the Manu National Park. It also recommended that the Park administration give respectful and preferential treatment to the Indians who lived in the park area before its creation, so that they may circulate freely, have the right to their traditions, and that they may benefit from the Park facilities.

In 1986, the President of the Republic had promised priority to the Indians to be forest guards for the Manu Park and for the Pampas del Heath National Sanctuary. Fenamad requests that the promise be implemented and that the Indians be trained to that effect.

Apparently, some foreign reserchers have created some disagreeable situations with their work in Manu Park. Fenamad wants a better control of researchers, so that they do not bring about health and ethnic identity problems, and that they respect the Indians culture and their human condition.

In its Sixth Congress, Fenamad asked that the Indians have freedom of movement in the Park, that their human rights be respected and the procedures to confer titles to these communities be put into effect. It requested an entry control of white and half-blood people, regardless of the purpose of the visit. This harmony, which seems so easy to attain, like the relation between the preservation areas and the adequate use of the local people who have lived there for thousands of years, ends up impaired by colonial arrogance.

Indigenous health

The health services for the indigenous populations is precarious and needs urgent measures in the face of the possible arrival of great projects in the region and the consequent migration increase. Doctors rarely come to the villages. There is no preventive or systematic, assistance plan. What assistance exists, is irregular and unequal, so, some communities are better assisted than others. One of the serious problems that the road opening will bring, is "malaria falciparum", which exists in Rondônia and not in Peru, and is resistant to current medications.

Most communities do not have any kind of medical assistance. They pay private doctors and public hospitals in the cities. This is when they have money, which is rare, because they need fuel to transport the sick and cash to pay the professionals. Some villages have nurses. There is no first aid training or monitoring. Only three communities have assistants, Shintuya, Diamante and Infierno, but only the first has a native one, the others are half-blood. These nurses are paid by the Madre de Dios Health Department. They are badly paid and not very interested in their work.

Training is very short, some take three months, some only one week, and are not repeated or up-dated. They receive a general notion of how to treat patients and a portable case, with some medicine, which "use before date" will expire, in most instances, before it is used. There is no control of their practice in the villages. It is very hazardous to introduce outside personnel into the villages when they are not prepared to understand the cultural universe they will enter, above all, when there is no disposition to do it. There have been well intentioned endeavors, but they were inadequate and badly planned, like introducing Quechua food, that the forest people do not know how to prepare, even if very nutritious, such as "kiwcha".

Fenamad proposes training for members of each community. This is what has had best results in the Amazon. They could take up the ones that have been trained in traditional medicine by Ametra. AIDSEP also gives private training, through HIFCO courses, in San Pablo de Tushmo and for a month, every year, in the Ucayali region. Two Fenamad representatives participated in 1990.

The most recently contacted groups are those penalized worst by this perilous or non-existent assistance. There was a whooping-cough epidemic among the Indians of Manu Park and they were given no assistance. Vaccination is irregular, and only used on those present at the time the staff comes by and there are no individual records kept. In the Fifth Congress, Fenamad requested the continuation of the polio and tuberculosis vaccination campaigns. In reference to malaria eradication, with alternatives to DDT which, according to specialists, is not simple.

They also stressed the need for health care posts in every village, built with local materials, giving priority to the communities most exposed to external contacts: Palma Real, Boca del Iñambari, Puerto Luz, San José de Karene and El Pilar. They also requested medicines and equipment for the existing posts in: Infierno, Shintuya and Diamante. Another requirement is for basic sanitary conditions. Some villages do not even have potable water or basic sanitation facilities: Boca del Iñambari, Palma Real, Puerto Luz, San José de Karene, Queros and Santa Rosa de Huacaria, these last ones at the border of Cuzco.

The solution is an articulation from the communities organizations, represented in Fenamad at their annual congresses, with the non-governmental organization staffs that assist them, such as EORI, AMETRA and AIDSESP. These organizations should maintain conventions with the regional institutions, such as the Puerto Maldonado Hospital, with the national ones, such as the Health Ministry. These conventions would seek preventive action and training. The Sixth Congress recalled the need for basic sanitation for : Tres Islas, Boca del Inamari and Barranco Chico communities, and asked for basic medicines for every community, and the recognition and training of health personnel, with priority to San Jacinto.

A minimum health service should include one medical orderly, trained and recycled in each community and health monitors in each village. The whole system, controlled by two or three doctors, the same number of registered nurses and dentists. Some of them would stay in the city and others would systematically visit the communities, in a preventive program. This program should be individual, through personal charts which will register all sorts of useful information to the health professionals, vaccination, diseases, childbirth, etc. These professional staffs need equipment and continuous recycling agreements with the nearest health centres, which have equipment and specialists.

Traditional Medicine and AMETRA 2001/Infierno

There is a budding activity in traditional medicine, which is highly positive. It is a convention between Fenamad and ONG AMETRA 2001. It plans training for monitors and the construction, already started, of a research and production centre, the Nape ethnic-biological centre, in Infierno. There is a list of plants already made. It needs a stronger association with ethnologic researches, for the study of ethno-science. It is not known how AMETRA is dealing with this matter.

A plant or a dosage cannot be easily introduced into another culture. The healing activities, belong in many cultures to the religious universe and cannot be introduced as a white people's medicine. The imposition of one culture upon another should be avoided. Apparently, the Quechua

or Shipibo traditional medicine is more advanced. This kind of medicine should not be restricted to a list of plants and their use, but has to be understood in the cultural universe in which it is integrated.

Apparently, there is a lack of participation of the medicine people. The traditional medicine is limited, particularly, in dealing with the diseases brought by the colonization progress. It must be an efficient help, and not only a study. Maybe AMETRA has a good understanding of these problems, however, the manager responsible did not have time available for an interview.

Fenamad is satisfied with AMETRA's work and the determinations of its Fifth Congress refer to the Second Traditional Medicine Course, in August, 1987. A doctor worked with AMETRA and made a health survey of some indigenous communities of Alto Madre de Dios. During our visit we read the report but AMETRA did not allow us a copy, which will be very useful to the health care plan for the region. Unfortunately, Dr. Neptali Cueva is no longer working for AMETRA.

As it is, AMETRA's conventional professional services are not available. Its work with monitors seems important but it was not possible to have a closer look. It was also not possible to learn of its tourism activities. Its work should be better known. Fenamad expressed its support to AMETRA in its Sixth Congress, but recommended that the training courses meet the expectations of the participants.

Educational exchange

There are two educational systems, a private religious one, provided by the Dominican priests, effective in three communities, Palotoa, Taiakome and Yomibato. Even though it conveys proselitism and the Indians know its inconvenience, the public system teachers seem less prepared and less uniform. There is a clear statement by Fenamad about education, expressed in its XIII Congress, requiring more scholarships to meet the population increase and bilingual teaching, through a department for bilingual, intercultural education, recognized by the Education Ministry.

The Madre de Dios Development Coordination also granted some scholarships in 1987. Fenamad requested that its congress and the communities representatives administer these grants, through a convention, with the support of trusted professionals. These would be approved by the communities assemblies. Some scholarships have been granted by The International Work Group for Indigenous Affairs, with headquarters in Copenhagen, Denmark, for university studies, in Lima, with Norwegian technical and cooperational support.

Fenamad has joined with CIAAP, for the training of bilingual monitors. In February 1990, about 20 were being prepared. Some of them from the Madre de Dios region, with the help of the Catholic Church.

The proposal is for a special intercultural, bilingual program, and Fenamad requests funds and personnel for this activity and radio programs for raising the awareness of indigenous culture. The communities also want the recognition of their creative arts and crafts.

In the Sixth Fenamad Congress, the communities representatives, expressed their opinion about the Madre de Dios educational action among the Indians. They demanded the immediate change of teachers appointed to San Jacinto, Tres Islas, Boca del Iñambari, Arazaire de Villa Santiago and Puerto Arturo, and the punishment of an employee for "immorality", and the substitution of a teacher in Santa Rosa de Huacaria. Demanded the salary of a helper, who had not been paid for seven months and also asked that the educational administrators of Madre de Dios, supervise the teachers work in the indigenous communities, on a permanent basis.

Besides the education for children and young people, the Indian leadership are concerned with the realization of short training courses for adults, adequate to give basic instruction in accounting, administration, planning and finance. And there are no current bilingual courses for monitors.

Indigenist Action

It is important to develop a differentiated action for the recently contacted communities, such as the Sonene, who are isolated, without transport, where there is no health care, and Spanish is not widely understood. Fenamad protested against the way the Indians are treated by the political, military, administrative and legal authorities. Complaining about bad treatment of young people in transit. They request that Indians be excluded from compulsory military service, due to enlistment difficulties and to everyday work. The lack of military service certificates have caused many study problems for many young Indians.

The same problems occur with birth certificates. Fenamad proposes a convention with EORI and the provincial councils, so that the NGO would deal with the registration. This has been done in Tambopata and Madre de Dios.

As to the defense of their rights, the Indians propose the support of EORI, which has started some actions to this effect.

Some courses in law and civil registration for communities have been given with the CIPA and CORDEMAD participation.

The communities also want to have a Communities Home in Puerto Maldonado, "Hogar Nativo", with help from the Education Ministry. A woman architect graciously offered the design for future building. EORI is the most sensible indigenous program in Madre de Dios.

Tourism, ecological tourism and the Indians

Indians are included in the tourist packages, with a profit of 1.6 million US dollars and this needs careful attention. Problems already exist. A lodging house that belonged to "Peruvian Safari" was burnt down by the Indians. Why? It is not clear what their relation with the Indians is like. Arms are taken away from them, but no alternative is offered to them.

Besides Manu and Infierno, there are unsolved problems in Diamante (Piro, Mashiguenga and Aruak), where Indian hand made articles would be sold, but now they want another lodging house. What is the Indians relation with tourism? What do they gain from it?

Participation instruments

The importance of adequate instruments of participation for the communities involved in impact projects, is being consolidated in public policy decisions. These policies have to be discussed directly with the involved communities, as well as with their representative institutions. This initiative has been taken by the Brazilian government and by BID, in the PMACI case, it was one of the reasons for the postponement of the Planaflo Project and has been one of the main themes for discussions with the World Bank and the EEC.

To hear these communities is not only a matter of principle. It has been verified, in many of the large scale projects, that the joining of the large construction companies and circumstantial, political and electoral schemes, end up being detrimental to public policies. Let us take the case of Polonoroeste, where 70% of the budget was spent on infrastructure, against 5% in rural development and 3% on the Indians and the environment.

One case was the building of numerous warehouses, for rural support but sited in urban centres, which became useless, controlled by private interests. This political-bureaucratic-electoral link with the construction companies, results in the inadequate use of constructions, with very expensive materials and equipment that are not available in the region and that could be developed locally.

There are two mistakes which should not be made. One is to only hear the national organizations and not the local. The other is the opposite, to hear the local organizations and ignore the national, which have accumulated experience in other regions. It is also important to hear the NGOs and the scientific communities and to keep an important role for the universities and research institutions, avoiding the arbitrary action of a small circle and the utilization of funds in objectives unrelated to the program.

The questions about the native communities should be taken up with Fenamad, which represents the communities of the Madre de Dios region

and the surrounding areas. And it is also important to hear EORI, which has had long experience with the Indians and the Madre de Dios regional development. Many representative organizations are being formed in the region, by the Brazil nut harvesters, the rubber tappers, the settlers and in the suburbs of Madre de Dios, and they all must participate in the decisions.

Hearing must not be just that. It must become a real council, where the people involved are represented, side by side, with the researchers, supporters and activists, who know the regional situation.

On a national level, there are many institutions to be involved and heard, about the Indian issues, such as AIDESEP and COICA. The first one is Peruvian and has a long tradition, the second is the unified organization for the indigenous movements of the Amazon basin countries. COICA has already taken stands on the environment and great projects in the Amazon. Before the paving or any construction project in Madre de Dios, it is essential to call the representatives of the indigenous affairs and environmental organizations of Peru. There are various experiences on these themes. For example, there is ACSS, where Humberto Labarthe started a study about natural resources.

Without the adequate organization of civil society and its participation, a democratic form of planning is not possible, and there is a great risk of the incorrect and inefficient use of resources, which end up going to non priority purposes. The Brazil-Peru road connection, or Pacific Highway, cannot be implemented without the adequate use of the natural resources, the protection of the traditional communities and of the Indian nations. The first step is to give them an adequate hearing.

Abbreviations

AC	Acre State
AI	Indian Area.
AID	International Agency for Development.
ACSS	Asociacion para la Conservacion de la Selva Sur.(Association for the Conservation of the Southern Forest)
AIDSEP	Asociacion Indigena para el Desarrollo de la Selva Peruana. (Indian association for the development of the Peruvian Forest)
AM	Amazonas State.
AP	Amapá State.
BEC	Batalhão de Engenharia de Construção. (Construction Engineering Battalion)
WB	World Bank.
BID	Bank for Inter-American Development.
BR	Brazilian Highways.
CANORPA	Cooperativa Agrícola do Norte do Paraná. (Northern Paraná Agriculture Cooperative)
CCPY	Comissão pela Criação do Parque Yanomami (Commission for the Creation of the Yanomami Park.
CEDI	Centro Ecumênico de Documentação e Informação. (Ecumenical Documentation and Economic Information Centre) CEMAT - Mato Grosso Central Power Plants.
CERON	Rondônia Central Power Plants.
COFIDE	Corporacion Financera del Desarrollo (Corporation for Financial Development).
COICA	Confederacion de las Organizaciones Indigenas de la Cuenca del Amazonas. (Confederation of the Indian Organizations of the Amazon Basin)
CIMI	Conselho Indigenista Missionário. (Indigenist Missionary Council)

CONAGE	Conselho Nacional dos Geólogos. (Geologists National Council)
CORDEMAD	Coordenacion del Desarrollo de Madre de Dios. (Madre de Dios Development Coordination)
CPRM	Companhia de Pesquisas de Recursos Naturais. (Natural Resources Research Company)
CVRD	Companhia Vale do Rio Doce.(Vale do Rio Doce Company)
DNPM	Departamento Nacional de Produção Mineral. (National Department for Mineral Production)
DER	Departamento de Estradas de Rodagem. (Highways Department)
DNER	Departamento Nacional de Estradas de Rodagem.(National Highways Department)
EFMM	Estrada de Ferro Madeira-Mamoré. (Madeira-Mamoré Railway)
EPM	Escola Paulista de Medicina. (Paulista Medical School)
FAO	Food and Agriculture Organisation.
FENAMAD	Federación de los Nativos de Madre de Dios. (Madre de Dios Native Federation)
FINSOCIAL	Fundo de Investimento Social. (Social Investment Fund)
FIPE-FEA-USP	Fundação Instituto de Pesquisas Econômicas. (Economical Research Foundation) Faculdade de Economia e Administração. Universidade de São Paulo. (Economy and Administration School- São Paulo University)
FUNAI	Fundação Nacional do Índio. (National Indian Foundation)
GETAT	Grupo Extraordinário de Terras Araguaia-(Extraordinary Group of Araguaia and Tocantins Lands).
IAMÔ	Instituto de Antropologia e Meio Ambiente. (Anthropology and Environment Institute)
IBAMA	Instituto Brasileiro do Meio Ambiente e dos Recursos Naturais Renováveis. (Brazilian Institute for the Environment and Renewable Natural Resources)
EX-IBDF	Extinto Instituto Brasileiro de Desenvolvimento Florestal. (Now defunct Brazilian Forest Development Institute)
INCRA	Instituto Nacional de Colonização e Reforma Agrária. (National Institute for Colonization and Agricultural Reform)

INPA	Instituto Nacional de Pesquisas da Amazônia. (National Institute for Amazon Research)
INTERMAT	Instituto de Terras do Mato Grosso. (Mato Grosso Land Institute) MA Estado do Maranhão. (Maranhão State)
MT	Estado de Mato Grosso. (Mato Grosso State)
OESP	O Estado de São Paulo. (São Paulo newspaper)
NGOs	Non-Governmental Organizations
ONU	Organização das Nações Unidas. (UN)
PCH	Pequeno Aproveitamento Hidrelétrico. (Small electric power production)
PA	Estado do Pará. (Pará State)
PDRI	Programa de Desenvolvimento Regional Integrado. (Integrated Regional Development Program)
PDS	Partido Democrático-Social. (Social-Democratic Party)
PETI	Programa de Estudos das Terras Indígenas. (Indian Lands Study Program)
PF	Polícia Federal. (Federal Police)
PI	Estado do Piauí. (Piauí State)
PIN	Programa de Integração Nacional. (National Integration Program)
PM	Polícia Militar.
PMACI	Programa de Meio Ambiente e Comunidades Indígenas. (Environment and Indian Communities Program)
POLONOROESTE	Programa Integrado de Desenvolvimento do Noroeste. (Integrated Program for the Development of the Northwest)
RIMA	Relatório de Impacto Ambiental (Environmental Impact Report).
RO	Estado de Rondônia. (Rondonia State)
SBPC	Sociedade Brasileira para o Progresso da Ciência. (Brazilian Society for Scientific Progress)
ex-SEMA	Extinta Secretaria Especial do Meio Ambiente. (extinct Special Secretary for the Environment)
SEMAM	Secretaria do Meio Ambiente. (Environment Secretary)
SEPLAN	Secretaria do Planejamento. (Planning Secretary)
SP	Estado de São Paulo.(São Paulo State)
SPI	Extinto Serviço de Proteção ao Índio. (Non defunct Indian Protection Service)
SPU	Serviço do Patrimônio da União. (Union Patrimony Service)

SUDAM	Superintendência do Desenvolvimento da Amazônia (Department for the Supervision of Development in the Amazon)
SUDECO	Superintendência do Desenvolvimento do Centro (Department for the Supervision of Development in the West Central)
TO	Estado de Tocantins. (Tocantins State)
UHE	Usina Hidrelétrica. (Hidroelectric Power Plant)

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