"THE OPENING OF BRAZIL'S AMAZON REGION: PROBLEMS AND PERSPECTIVES"

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CERTIFICATE

This dissertation entitled THE OPENING OF THE BRAZIL'S AMAZON REGION: PROBLEMS AND PERSPECTIVES by Mr. Mirza Naseer Baig for the Degree of Master of Philosophy is an original work and has not previously been submitted for any degree of this or any other University.

We recommend this dissertation be placed before the examiner for evaluation.

José Leal Ferreira Junior
(SUPERVISOR)

(CHAIRMAN)

Dated: 29.5.92

J.L. FERREIRA Jr.

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Mirza Naseer Baig

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C O N T E N T S

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PREFACE

The opening of the Amazon Region has increasingly become the focus of international attention particularly since 1970s. It covers the largest area in the world of what remains the primeval tropical rainforest. The region's resource potential has been referred to as the last "Agricultural Frontier".[1]

The progressive opening of the Brazilian Amazonia has been a source of considerable controversy. Issues like species extinction, changes in the local and global hydrological and climatic regimes have been disturbing the environmentalists. On the other hand social scientists are more and more concerned with land conflicts increasing peasant marginalization, extinction of native population and destruction of their habitat.

For the Brazilian authorities, the economic development of Amazon is an integrated national development project, aimed at the utilization of the unexploited natural resources for the betterment of the economy of millions of Brazilian, a large segment of them living in poverty.

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1 Susana B. Hecht, "Environment, Development and Politics: Capital accumulation and Livestock Sector in Eastern Amazonia", World Development, June 1985, pp.662-84.

Brazil's realization of the need for development of Amazon arouse for the first time around late 1940s. The polarization of economic activity in the South-East has largely been at the expense of exploitation and under-development in the rest of the country, more particularly the North-east and the North. This awoke in the people a consciousness that if the country could broader its resource base, by opening of the Amazon region, then such disparity in development and growth would diminish.

The national policies, initiated in 1970s, aimed at the economic development of regional centres to offset the attraction forces of the growth pole in the South-east. Part of such a policy was contained in special programmes such as "Proterra", integration plan for the North-east and the projects related with the economies of Belem and Manaus.

In the early 70s, Brazil was enjoying the "economic miracle". Its market was booming, industrial exports were expanding and there was every reason to expect a continuous growth that would fulfil the country's ambition to achieve international "great power" status. Then occurred the oil crisis and the rising oil prices deeply compromised with the economy of the country.

Brazil imported at that time no less than 85 percent of its oil requirement. In the mid 1970s the country began to experience a grave balance of payment problem. It was in this context that Brazil pragmatically began to shift its foreign policy; one aspect of which was to encourage an orderly exploration and exploitation of the Amazon resources on a Latin American perspective. The cautious liberalization of the Brazilian domestic policy led Presidents Giesel and Figueiredo to the abertura, which made a distinct contribution to improve the relation with South American countries. Brazil's new foreign policy was manifested in President Ernesto Geisel's proposal of an Amazon Pact. The pact was signed in July 1978 by representatives of Bolivia, Brazil, Columbia, Ecuador, Guyana, Peru, Surinam, and Venezuela and is basically a mechanism for loose co-ordination of the development by each sovereign units of its own Amazon territory. The Amazon pact concerns itself with matters such as free navigation of rivers, protection of flora and fauna, improvement of health condition and promotion of tourism and scientific research.

From the ecological point of view the Amazon region is the home of a large number of world's vegetation and animal species. The forest traps moisture and

encourage rainfall and their roots stop soil from being washed away, the tree trunk lock up carbondioxide that may otherwise contribute to warming of the global climate; besides the benefits of free food, fuel, building materials. But for the short term gains the rainforest are being extensively cut down.

Since 1964, when the military came to power, Brazil has followed an active policy of opening up of the Amazon under the slogan of "a land without men for men without land".[2] Amazon, today has become an important issue on the agenda of Brazilian national and foreign policy. The Amazon Basin and the diplomacy associated with it has begun to receive a large attention in the world policies and media.

The late 1980s witnessed the emergence of an extraordinary global consensus on the importance of natural resource management and environmental protection. The public, planners and politicians, north and south, appear to be in agreement on the high status to be accorded to environmental issues. The pressures that have led to this consensus and the degree of sincerity amongst the planners and politicians are of course

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2 Times(London), 14 July 1989.

questionable. What is clear, however, is that in the 1990s in those countries where civilian society can express its opinion freely and where these opinions will be taken into account in the formation of public policy, politicians and planners will be obliged at least to coat their policies with a green varnish if not actively re-plan for sustainable development. Dead and and gone are the days when environmental concerns could be dismissed out of hand as the province of romantic idealists. With the recent transformations in central and Eastern Europe and the re-emergence of pluralist politics throughout most of Latin America, the number of societies experiencing public pressure to re-think future development through a green prism has increased substantially.

Various megaissues have contributed to this sea-change in public opinion and political response: desertification, global climatic change, marine pollution, food and water quality, nuclear risks, atmospheric pollution. One of the most resonant issues, however, which is capable of detonating substantial expressions of preoccupation and bewilderment, has been the fate of the world's tropical forests. Although tropical forests exist and suffer similar processes of degradation in Africa, Asia, Australia and Latin America, public

opinion in countries without rainforests appear to have elected Amazonia, especially the Brazilian Amazon as its major concern. There are obvious reasons why this should be the case. The Amazon region is by far the largest remaining tropical forest on the planet, and the major part is located within Brazil. In addition, the relatively open nature of Brazilian society and the flow of information between non-governmental organization, grassroot networks and environmental activists in Brazil and their peers in the North have resulted in an increased media coverage of Brazilian Amazon Affairs and public familiarity with the apparent crisis in the Amazon, at least with its symptoms if not with its causes. This familiarity has increased as representatives of communities in crisis - Amerindians, rubber tappers, peasants - have travelled to Europe and North America to lobby governments and to seek solidarity. As media experts and campaigners know, arousing and maintaining public interest involves offering three things: a simple message, a villian and possibility of contributing to the victory of right over wrong.

The message is simple enough: the planet's largest remaining tropical forest is burning. Within this overall message, there are subtexts according to the interests of the audience: the destruction implies

loss of bio-diversity - already substantial losses of fauna and flora can be observed and thefuture loss of as yet unstudied eco-systems is incalculable, the burning of tropical forests, the argument goes, is a major contributing factor to global warming, implying increased levels of risk to the well-being of all humanity; the process similarly represents a grave threat to the physical and cultural survival of forest dwellers, regarded as guardians of the forest and practitioners of a symboisis with their natural environment that should be emulated, rather than destroyed.[3]

The villians are seemingly numerous and easily identifiable, depending upon the particular aspect of the tropical forest 'crisis' concerns the viewer. They include: the Brazilian government, international development institutions and their inappropriate policies; the timber trade; mining and oil companies, northern banks extracting their pounds of flesh from victims of the debt crisis; northern consumers and their desire for products of the forest, traditional and newly installed - woods, nuts, essential oils, beef, cocoa, coffee, fruits, vegetable oils, minerals - at discount prices.

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3 N Myers, Deforestation Rates in Tropical Forests and their climatic implications (London: Friends of the Earth, 1989), pp.13-26.

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Consumer choice in contributing to the cause is substantial. Thousands of the concerned citizens in Northern countries can and do: lobby the World Bank and their own government; demonstrate outside Brazilian embassies or participate in protest letter campaign, boycott mahogany fittings, worry about the origin of the coffee or meat consumed; ask their banks for details of their lending policies to countries with rainforest areas; make financial donations to organizations engaged in promoting appropriate development activities or assisting the victims of the crisis.

And yet the simplicity of the message that has got people on board, the badwagon inhibits a wider understanding of the complexities - the ecological and social - at play. If, on the one hand, it is understandably difficult for outsider to grasp the immensity and complexity of the Amazon forest or to avoid conceiving of it as some how resembling the relatively small and homogeneous forests familiar to them, only writ larger, on the other hand, it is generally more comfortable to have strongly-held views on issues that are distant from U.S. as opposed to those that led

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•••• Tropitcal deforestation is estimated to be contributing between 18 and 19% of the build up of green house gases in the global atmosphere. Because emissions from forest burning appear to be increasing faster than those from combustion of fussil fuels.

us into difficult choices in our own societies. This is matched on the other side of the fence by the planners and politicians involved in 'developing' the Amazon region whose advocacy of policies for the incorporation of its natural and human resources into the national economy have similarly simplified reality for short-sighted or self-serving ends. Self-serving and deliberately simplistic, also is the reaction that costs outside concern as a hypocritical attack on national sovereignty and those expressing that concern as stooges of Northern economic interests. An expert on the problems of Amazonia recently wrote a warning against ignorance:

> Amazonia is in the news. It definitely appears to have become a permanent issue for the future of Brazil, of the other Amazonian nations, of the planet. Even leaving aside the fashionable aura that surrounds it.
>
> From 'bread basket' to 'lungs' of the world, from demographic 'void' to 'geopolitically and economically strategic area, from 'last frontier' to ildorado' for the colonist and prospector, the Amazon region - which comprises the largest portion of the world's tropical forests - remains basically unknown to outsiders of all origins and persuasions.(4)

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4 Anthony Gross, "Amazonia in the nineties: Sustainable Development or another decade of deforestation", Third World Quarterly, vol.XII, Nos. 3 and 4, Winter 1990-91, p.3.

With only mild caricature, we can say that both concerned outsiders and national decision-makers, indifferent ways and for different ends, have tended to assume a stereo-typed homogeneity, ecological and social, with regard to the Amazon. This has served to justify on one hand environmentally and social permicious public policy and on the other hand, has run the risk of channelling genuine concern into comfortable but unhelpful mindsets. Those social groups that have a clearer understanding of the region and its problems have tended, historically, to be voiceless. The mass of the regional population has been excluded from effective political participation. Those scientists, natural and social, who have studied the region have tended to talk mainly to each other and have rarely penetrated the realms of policy making and implementation.

The novelty of the current situation is that this state of affairs has begun to change local community views and scientific opinion have acquired, within a very short span of time, a prominence that they have never had before, but this does not automatically signify a capacity to influence the policy.

Green voters and politicians in rich countries want to stop what is seen as the systematic destruction of the rainforests. In 1990, Houstan Summit of G-7 called for a convention on forest conservation. For the developed countries the rainforests are a global public good as it locks up carbondioxide. Already western aid to forestry has greatly increased and recently some of the European community government had banned the imports of tropical timber as a sign of protest. The World Bank is considering proposal to stop financing plans involving the commercial logging in the Virgin rainforest and a more rigorous scrutiny of loans on infrastructural projects in Amazonia, such as dams, mines, and roads.

In Brazil, as a reply to the green campaigners, President Fernando Collar has scrapped the subsidies to cattle ranching in the Amazon region as a part of his environmental policy. The Collar's government announced plans to set aside 63.8 million acres of Amazon land as an "Extractive Reserve". Another pillar of President Collar's green policy has been the ecological zoning. But on the other hand local politicians want rapid development of Amazon region. Gilberto Mestrinho, the Governor of State of Amazonas expressed a point of view largely shared in the region,

when he said, "Environmentalists want to keep Amazon as a circus and us as monkeys". Recently he convened a regional conference to endorse on Amazon code which said among other things, "All and any economic use of the natural resources will be permitted.[5]

Thus, today the problems confronting the development of Amazon region needs to be seen from regional, national and global perspectives. It is in this context that this paper will attempt to make an enquiry into questions as - how and why developed nations are trying to influence the Brazilian governments attitude towards the development of Amazon region. What is the fate of Amazon? What is United States and West European countries response towards its opening? This approach must not ignore the region, hemispheric reaction to all policies related with the opening.

Largely the green campaigners in US and EEC countries want Brazil to orient its occupation of the Amazon forest region free and protected, from its destruction. What is Brazil's response to these positions and pressures? How is the Amazon region seen

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5 Times(London), 12 December 1990.

in Brazil's foreign policy and more particularly in the context of its relations with Washington? The standard taken by the international community does imply the provision of aids? Does the grant of aids means some loss of Brazili's sovereignity over the region? Does it also mean that conservation, exploitation and finally the development of the region under study is conditioned by exogeneous forces? Against this background it must be studied what has been the programmes and policies for the development of Amazon by successive administration's since the military came to power in 1964? What are the constraints for Brazil in shaping an independent policy and to what extent Brazil can pursue an independent effort in development of Amazonia and its resources in the present context of "international dependence"? Should Amazon be seen as a global public property, following the viewpoint of the greens that the future of the entire man kind depends on it.

This study would also attempt to evaluate the implications of the Amazon Pact signed in 1978 and to what extent it has been successful? Can the Amazon Pact be seen as a reply to the green diplomacy of the developed world.

The intended study will briefly evaluate the framework used in the analysis of the environmental questions pertaining to the rainforest region. These mental questions can be inserted into one analysis of the political-economy of Amazon development by using an historical and political economic approach to integrate development. The paper fo cusses on domestic and international processes as they have unfolded and effected the opening of the Amazon region. It intends to survey and analyse the opportunities and constraints that have been observed in the development of Amazonia particularly since the military administration from 1964 and more particularly from the decade of 1970s onwards.

Under this broad framework, the dissertation is divided into five chapters. In the first chapter a broad general introduction to the Amazon Basin has been attempted by taking into account, the various aspects of its physical and human setting, thereafter an attempt has been made to understand the problem of opening of the tropical rainforest region in general and the specific problems related to the Brazilian Amazon in the context of the indigeneous population of the region.

The second chapter of this dissertation deals with the Brazilian Development model and the Amazon region from 1970 onwards. Important dimensions of the topic like opening of the roads, settlement of population and exploitation of its resources has been discussed at length.

In the third chapter an attempt has been made to understand and analyse the Amazon cooperation treaty signed in 1978 and its significance.

The fourth chapter focusses on the Brazilian approach to the opening of the Amazon Region in the context of United Nations Conference on Environment and Development to be held in Rio de Janeiro in June 1992. This is further followed by the summary and conclusion.

The research study is based essentially on secondary source material such as books and periodicals articles published on Amazonia in recent years. Also in terms of constructing the chronology, of events, leading magazines and newspapers, information from Facts on File had been used as and when required. The study is in essence a descriptive analysis of the opening of the Amazon region, its opportunities and constraints having a bearing on the questions raised in the outline.

CHAPTER I

AMAZON REGION: INTRODUCTION TO ITS PHYSICAL AND HUMAN SETTING

(a) The Amazonian Geographic Setting:

Location: The part of Brazil that is classified as legal Amazonia covers some five million sq. km. or almost sixty percent (60 percent) of the country.[1] Amazonia similarly comprises substantial part of eight other countries: Bolivia, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela, besides the French Guiana. The Amazon basin is a young sedimentary plain situated between two old, not very high crystalline plateaus, on the west by the Andean Cordillera, on the South by the Brazilian highlands and on the North by the Guyana highlands.

The vast sedimentary area, the largest in the world is a very low tertiary period plateau, most of which presents a subdued relief of hills, ridges and tablelands. Most areas are less than 60 meters above the sea level, but some ridges, as high as 120-240 meters, are also found. It covers part of the

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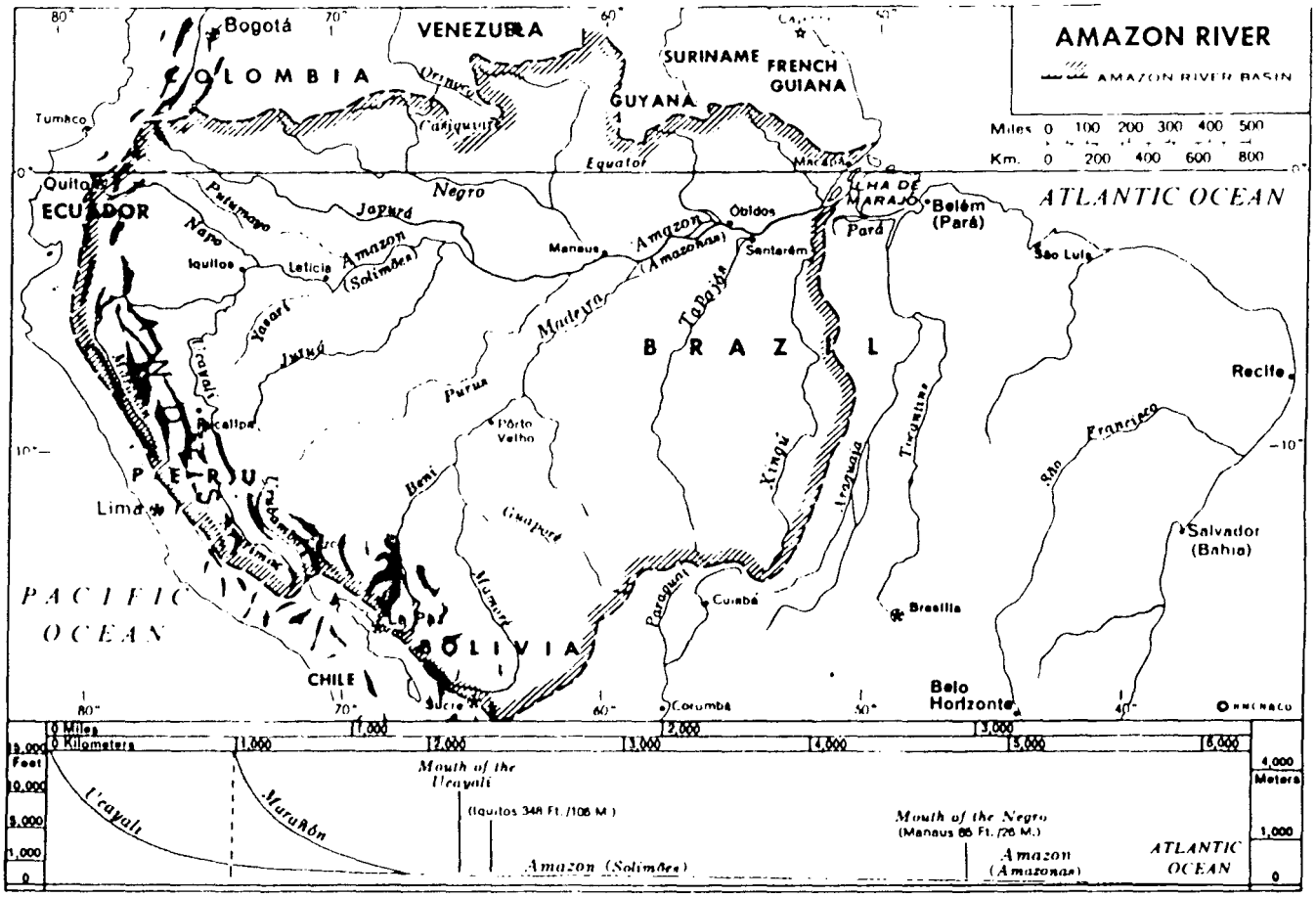
1 According to N Myers the original extent of the Amazon forest was 4.8 million sq. km. and current extent is around 3.8 million sq. km. In Brazil, the totals are 2.9 million sq. km. and 2.2 million sq. km. respectively. The present total extent of tropical moist forest in the world is about 8 million sq. km. N. Myer, Deforestation Rates in Tropical Forests and their climatic implications (London: Friends of the Earth, 1989), pp. 13-26.


AMAZON RIVER
AMAZON RIVER BASIN
Miles 0 100 200 300 400 500
Km. 0 200 400 600 800
Bogotá
VENEZUELA
COLOMBIA
SURINAME
FRENCH GUIANA
GUYANA
Tumaco
Orinoco
Caiquire
Equator
Macapá
Quito
ECUADOR
Putumayo
Negro
Japurá
Napo
Iquitos
Leticia
Amazon (Solimões)
Manaus
Amazon (Amazonas)
Óbidos
Santarém
ILHA DE MARAJÓ
Belém (Pará)
Pará
ATLANTIC OCEAN
São Luís
Madeira
Tapajós
BRAZIL
Recife
Ucayali
Yavarí
Juruá
Purus
Pucallpa
Porto Velho
PERU
Lima
Beni
Guaporé
Xingú
Araguaia
Tocantins
São Francisco
Salvador (Bahia)
PACIFIC OCEAN
Mamoré
Paraguay
Cuiabá
Brasília
BOLIVIA
CHILE
Sucre
Corumbá
Belo Horizonte
0 Miles
0 Kilometers
Feet
Meters
Ucayali
Marañón
Mouth of the Ucayali
(Iquitos 348 Ft./106 M.)
Mouth of the Negro
(Manaus 85 Ft./26 M.)
Amazon (Solimões)
Amazon (Amazonas)
ATLANTIC OCEAN

precambrian formations of the Brazilian shield to the South and Guiana shield in the North. Between these two ancient upland regions the main formations are vast sedimentary deposits of alluvia brought down from the geologically recent Andean highlands. The forest covers plateaux, lowlying plains and mountain ranges.

The element in the landscape that most impresses in the Amazon region is its gigantic tropical rainforests, the Amazon Hylea. Like a dense mantle or carpet the forest covers almost the entire region. It is the equatorial varient of the tropical rainforest and is typical of continental areas that have highrainfall and uniformly warm excessively humid rainy climate. The forest of the floodplain has greater botanical diversity than that of higher ground. The quantity and variety of seeds carried by the annual flood water and deposited on rich soils of the flood plain are very great. The dry land forest on the unflooded higher ground however has a great variety of useful hardwood. On the flood plain the so-called "White" or soft woods predominates - among them the rubber tree (Hevea) and the Kapok tree (ceiba pentandra) are important.[2] The high

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2 John Saunders, ed., Modern Brazil: New Patterns and Development (Gainesville, University of Florida Press, 1971), p.32.

density wood of the highlands includes mahagony and other fine cabinet woods and the Brazilian nut tree (Portuguese, Castanheiro) which provides good building timber. There are many oil yielding palms in the forest and the familiar profusion of ropelike lianas and epiphytes. The competition for sunlight forces the trees and their parasite plant to strive upward with trees sometimes reaching 50 metres above the ground. There are also some fairly large areas of Savanna grass-lands.

The Basin has varied insects, reptiles and birds population, but there are few large mammals. There are no equivalent in the Amazon region, or in South America generally of - the large animals of Africa. Much of the wildgame in the more populated areas has been killed by hunters or driven away when forests lands were cleared for crops or pastures. The Amazon which is the future of the world's richest Biosphere has vast quantity and variety of trees, birds, fish and insect life unmatched any where in the world. Scientists say there are 2000 known species of fish in the waters of the Amazon Basin, 10 times the number found in all of Europe.[3]

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3 Times (London), 12 December 1990.

Climate: The climate over most of the Amazon Basin seems monotonous to people raised in the mid latitude, but it does have two distinct seasons - a dry season lasting for three to five months and a rainy season. Most areas receive 200-300 cm of rainfall per year and experience day-time temperature above 32°c.[4] The warmest months are September to November, at the end of the dry season and just before the rainy season.

From May through September during the dry season, cold waves resulting from a north-ward movement of an Antartic polar airmass sometimes penetrates into the Western Amazon Basin. They can lower temperature for 3 to 4 days by 9-14°c. These cold waves further aggravated by the regions consistently high relative humidity of 85 percent damage crops, kill fish in shallow pools and brings misery to people who are unaccustomed to low temperature and are unprepared for warm clothing or heated house.

Along the eastern parts of the Amazon Basin winds from the east and South-east predominates. Farther inland variable lightwinds are more common.

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4 Jasper H. Stembridge, The World: A Regional Geography (London, 1973), p.456.

The rainy season from December through April actually coincides with the latitudinal migration of the moist air known as the Inter-Tropical Convergence Zone, towards the equator and the areas where the sun rays strike the earth's surface vertically. In general the most uncomfortable aspect of the climate can be minimized if there are shades and air movement. Modern scientifically designed houses in Amapa have broad roofs that are insulated against the noonday heat and that shade most of the exterior walls from the sun's rays. The sides of the rooms are open and screened allowing breeze to blow through the house. Until early in the afternoon, the atmosphere frequently absorbs the moisture that evaporates from land and water surface. Then a torrential thunderstorm will rage for 10 or 20 minute and the rest of the afternoon will be freshened and cooled by the shower. Around 4.00 p.m. the temperature begins to drop perceptibly - in contrast to the situation in the mid latitudes where the heat of summer days last longer.

Soil: Finally, when looking at the natural environment, one should bear in mind the extremely poor quality of the soils underlying the forests. Once again superficial impressions are deceptive. The exuberance of the forest canopy and life contained within it bear little relation

to the soils. Even scientists have suffered from this fallacy. Although the soil map of the Amazon is complex and shows patches of good to medium soil, most of the region offer soils that ranges from indifferent to extremely impoverished.[4] The secret of the exuberance of the forest lies not in the soils but in the complexities of the nutrient cycle operating at various levels within the canopy. In fact most of the activity in the forest, including the animal life, operates above the forest cover. The apocryphal remark that the Amazon is a desert covered by trees is not far wrong and this has important consequences when the forest is removed. The soil type ranges from red sandy soil at higher elevation to yellow sands and sandy clays that have been subjected to the process of Laterization in many places with its resulting crust of Iron and Aluminium oxides. The idea that the presence of a luxuriant forest throughout the region is an index of good soils is extremely deceiving, because trees can live well on water and very poor soils also. Older soils on the higherlands of terra-firme are by and large acidic, badly leached and poor in important mineral elements such as phosphorous, pottassium and nitrogen.

4 Susanna B. Hecht, "Environment; Development and Politics: Capital accumulation and livestock sector in Eastern Amazonia", World Development, July 1985, p.675.

Rain and Pluviometry: The typical tropical climate characterised by continuously hot and wet climate with at least two inch of rain falling each month occurs in a zone in the upper Amazon west of Manaus and within 4 (four) degrees of the equator. The wettest area along the Western Margin receives about 135 inch annually. The amount of precipitation decreases towards the eastern edge of the region to absorb 65 inch annually. The number of days in a year in which rain occurs varies greatly from 259 days in the North-west to 100 days in the extreme north of the Rio-Branco valley in the rain-shadow location behind mountains.[5] In the parts of the region in upper Amazon, farthest from the equator, both north and south, season alternates from wet to dry, depending upon the sun's position and atmospheric pressure. Such alternation provides the great river system with constant supply of water all the year. In general the northern tributary are at their highest in terms of volume of water from March to April and the southern upper tributaries from December to March, consequently the lower course of the river generally reaches its maximum in May. In the lower Amazon region, the entire Coastal

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5 Andrew Marshall, Brazil (Thames and Huddon, 1966), pp.27.

belt receive more than 80 inches of rainfall each year and the wettest zone is along the Amapa Coast with the average of 125 inch. Although still humid areas further from the coast towards the south and west experience at least 65 inch of rainfall annually.

Statistics of the Amazon rivers, the "river sea" as it has been called by the early portuguese are worth-noting. The tremendous volume of water discharged into the Atlantic, comes not only from the abundant rainfall over the vast territory of the basin but also from the melting of the snow clad Andes outside the Brazilian territory. The average width of the main stream is nearly three miles and extends without considerable flooding to the width of twelve miles at a junction with the Xingu in its lower course.[6] The mighty force of the stream has cut down deeply (to 200 feet at Obidos for example) keeping in mind that the elevation of the river upon entering Brazil from Peru is only 200 feet above the sea level. On an average the rise and fall of volume of water during the year in about 300 feet near Manaus. Great Meanders characterize the Amazon and the regularly flooded plain extend to more than thirty miles wide in places.

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6 ibid, p.29.

Forest and Vegetation: Except in the north of the Rio Branco plains and in the upland of Rondonia near the Southern margin the whole upper Amazon is covered by evergreen tropical forests which are dense, rich in species and greatly stratified in several vertical layers of differing characteristics. Variations in the topographical condition leads to variety in vegetation formation. On the non-flooded higher lands of terrafirme is best developed multi storey forest trees, such groupings of the majestic Brazilian nut tree reaching to more than 150 feet in height. Marshy forests occupy the wetland while periodically flooded areas bordering the streams carry a forest that is rich in Spicies, with few exuberants such as rubber tree which sometimes reaches 125 feet in height, though the trees in general are shorter than on terrafirme. Throughout the forest of Amazon are valuable trees that provide oils, waxes, fibre, medicines and timber. But a major problem is confronted in trying to get the products out.

In the lower Amazon region, there are areas of natural grasslands within the forests as well as areas of semi-permanently flooded forest-igarpe.[7]

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7 Antony Gross, "Amazonia in the rlineties: sustainable development or another decade of destruction", Third World Quarterly, vol.XII, Winter 1990-91, pp.1-20.

There are regions where Brazilian nuts and rubber trees are found together, regions where one is found independently of the other and region where neither is present. Other natural resources that have played a role in the development of human settlements and economic activity in the region are trees, plants and palms with their woods, fibres, leaves, fruits, nuts, flowers, barks, roots, latex, oil and essence. These different permutations in the plethora of forest products; for which humanity has identified a use, either within the region or outside, have led historically, to a heterogenity in the forms of human occupation and economic reproduction within Amazonia based upon nature's diversity.[8]

It is important to emphasize once again that despite the apparent uniformity of the forest canopy stretching from the Atlantic mouth of the Amazon river in the east to the Andean foothills in the west, scientists are increasingly aware of the fact that different parts of the forest contain differing ecosystem. Why this should be the case and the factors

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8 Robert F. Skillings, "Economic Development of Brazilian Amazon: Opportunities and Constraints", Geographical Journal (London), March 1984.

that have caused this unprecedented natural richness and complexity is a source of argument amongst the scientist.[9] The important point to bear in mind for our purpose is the existence of locally specific environments, the non-uniformity in ecological terms of the immense forest cover despite superficial appearances to the contrary.

One way of defining the Amazon region is to call it, covered by Amazon tropical rainforests. This dense forest flourishes in an equitorial climate and influences almost every primary economic activity of the region. The Amazon tropical rainforest is therefore the element that best distinguishes the Amazon region geographically. The Amazonia exhibits the world's largest tropical forest. The abundant warmth, humidity, and rainfall have created a lush botanical spectacle of unequaled variety on the globe.

Flora and Fauna: The Amazon rainforest is the host to a great variety of tropical fauna including hundreds of type of Macaws, toucanas, parrots and other brightly coloured birds, brilliant butterflies many species of

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9 See P.A. Colinvaux, The Past and Future of Amazon, Scientific American, May 1989, p.198.

monkeys, anacondas, boars, sloth and other large tropical snakes crocodiles, alligators, and turtles and such distinctive animals as the Brazilian tiger, armadillo and tapir. The river in the region abounds with turtles and exotic tropical fish and infamous cannibal fish 'piranha' is common. In all more than 2000 fish species have been identified.

The magnitude and complexity of life form in the Amazon ecosystem points to our lack of knowledge and the virtual difficulty in identifying life enhancing forest products, yet unknown to the outsiders as well as to the locals.

The Amazon is the home of more species than any other region of the planet.[10] Within these forest is a remarkable diversity of plants - more than any comparable rainforests elsewhere in Africa or Asia. Comparable rainforests elsewhere in Africa or Asia. Many of these plants have great promise for food-fibre and fuel, drugs and chemicals. It is a disturbing fact that majority of the world's population rely for their food upon fewer than two dozen plant species. Scientists have realized that this narrow food base

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10 Robert Goodland, "Brazil's environmental progress in Amazonian Development", Geographical Journal (London), vol.159, March 1987, p.128.

could be widened. Amazonian plants have great potential as new food sources. Cocao and pineapples originated in Amazonia and have been among the region's most important contribution to the world's economy side by side with rubber, as a commercial crop. Other species could make an equally great contribution under cultivation both within Amazonia and elsewhere in the tropics. However, the destruction of the rainforests is threatening their habitat and leading to the extinction of may species before their potential could be realised. Many species provide a supplement to large and starchy diets based on subsistence crops. When other means fail, local inhabitants can always rely for survival on these forest species.

Forest destruction, qully erosion, soil erosion are common in the Amazon forest. One of the main hurdle in tapping the forest resources is the geographical inaccessibility. Almost half the million of species and variety of organism live in the tropical forest which is not surprising when one considers the combination of Equatorial heat and high rainfall there that forms the ideal breeding condition.[12] Nature is

11 T.E. Lovejoy, "Amazon Ecology in a time of change", Geographical Journal(London), November 1988, pp.132-9.

at its most prolific in this warm humid world. Vegetation is evergreen and contains amazing genetic diversity. A quarter of all pharmaceutical products are derived from tropical forest plants. This is all the more remarkable considering that only 1% of the probable eighty thousand plant species in the Amazon have been intensively tested for their medicinal properties. Scientists in food and Agricultural organisation estimates that at least 10 percent of the untested species will reveal some anti cancer property and other potential utility. In places, the luxuriant selva offers as many as 3,000 different species per square mile. Animal life abounds as well..There are over 50 species of monkeys, unaccounted assortments of insects, a myriad of different birds and catalog of reptiles. Large animals are however rare. The tapir is the largest land mammal. In the rivers swims an impressive variety of species of fishes. The estimate ranges from 500 to 2000. Dense forests in many places surrender to grassy prairies, particularly notable in extension on the island of Mararjo between Purus and Madeira rivers and along the Branco river.

Amazon River: The Amazon River extends approximately 3900 miles (6275 km) across the Northern part of the South American continent. It is the world's second largest river. Surpassed only by the Nile (about 4145 miles or 6670 km). Amazon is referred to very aptly and descriptively in Portuguese as the "river sea - the largest river in volume in the world, with fourteen times the volume of Mississippi.[12] In places it is impossible to see from shore to shore and over a good part of its course it averages 100 feet in depth. The Amazon's drainage basin or water catchment area covers 2053318 sq. miles (5319,100 sq. km) and is the largest in the world.[13] The main body of Amazon flows across Brazil and with its tributaries it drains half the land of that country. Other tributaries flow into the Amazon from Bolivia, Colombia, Peru and Venezuela. Running eastwards from its source 18000 feet up in the Andes, it is joined from both north and south as it rushes across the continent by more than 200 branches and some of the mighty confluents are Negro, Purus, Madeira, Tapajos, Xingu and Tocantins. Together this

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12 Henry Koster, Travels in Brazil (Carbowdale, Illinois, 1966), p.28.

13 C.J. Barrow, "The development of Amazon", World Development, August 1989, pp.192-214.

majestic river and its tributaries provide 25,000 miles of navigable water. Ocean going Vessels can navigate as far inland as Iquitos in Peru, some 2,300 miles from the sea, where the river is 2,000 feet wide.

The Amazon river closely follows the line of the equator from west to east. It drains the most extensive area of high rainfall in the world. This explains why six of its tributaries and the Amazon itself are among the largest rivers of the world. The volume of water near the mouth of the Amazon is greater than that of any other river.

The entire network of rivers furnished the means of penetrating both the north and west of Brazil. The largest in the world, it drains approximately 36 percent of the national territory. In the far west the Amazon plain stretches to more than 800 miles in width, but as the river flows east wards both the Brazilian and Guiana Highlands close in so that the plain narrows to less than fifty miles in width, expanding again at the river's mouth which measures nearly 200 miles in width and 200 feet in depth.

The magnitude of the river always has excited the imaginations of the men who travelled on it since Francisco de Orellara first discovered and descended it in his expedition of 1541-1542.[14] William Lewis Harudon who made a similar journey down the river a little over three centuries later, marveled, as many had before and would after:

> The march of the great river in its silent grandeur was sublime, but in the untamed might of its turbid waters, as they cut away its banks and tore down the gigantic denizens of the forest it was awful. I was reminded of our Mississippi at its top most flood.(15)

As one flies over the Amazon river, it is difficult at first to grasp its immensity and diversity. The Amazon does not look like an ordinary river. It looks like a great river sea or huge arm of the sea, on which ocean going vessels are moving. Because of the breadth of the flood-plain, one can rarely see both margins at the same time. The river itself appears in varying shades of light tan although a few of its tributaries have a black colour. The vegetation along the bank is green and yellow.

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14 E, Bradford Burns, A History of Brazil(New York and London, Columbia University Press, 1970), p.11.

15 ibid, p.12.

The areas drained and served by the Amazon river have not yet been very productive or valuable to man. There have been sporadic periods of economic speculation in the area based on the forest products and rubber. Only the floodplain comprising 2 percent of the Amazon area is reasonably well suited to Agriculture. Hydro-electric potential is naturally small in rivers like the Amazon, where there are great volumes of water but little drop or head, along their courses to turn hydro-electric turbines.

In the 1960s, Brazil began to pump resources into its vast tropical hinterland by allocating not less than 3 percent of its federal tax revenue to the plan for the Economic Valorization of Amazon.[16] It had become apparent that the Amazon region would never progress economically with so few people spread over such vast area employing out of date technology without economic aid. Government and private investments in the Amazon region have at last begun to integrate it economically and culturally with the rest of Brazil.

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16 Werner Baer, The Brazllian Economy: Growth and Development(New York, 1983), p.124.

The Amazon and its tributaries: The sources of the Amazon river are many and scattered. The generally acknowledged source 3,900 miles from the rivers mouth is high in the snow capped Andes Mountains of Peru. Their icy mountain streams find their way into the Apurimac and Maranon rivers. The Amazon in its main course is not a meandering river like Mississipi and many other large rivers. It is broad more or less straight channel dotted with lens shaped island that vary greatly in length and width.

Going down stream as virtually all of the early explorers did, one is impressed by the monotony of the thick green wall of the tropical vegetation that lines each bank. Since the Amazon provides the only surface transportation route available to the travellers, the river and its bank are the best known portion of its basin. Most people do not venture away from the river and therefore the vast and varied Amazon region has usually been described in terms of its antechamber - the flood plain. From this fact has come the misconception that the Amazon region is a vast flooded swamp.

The principal tributaries are full fledged rivers. The largest right bank, or the northward flowing tributaries and their lengths are the Xingu (2900 km), Tapajos (1800 km), Madeira (2380 km), Purus (3220 km) and Jurua (2400 km). The main left bank tributaries are Japura and the Negro. Some of the tributaries like Rio Negro resembles the Amazon in that they do not meander. Others like Purus and Jurue have pronounced meander patterns. The reason for this difference are not yet well understood.

Navigation: The Amazon river and its tributaries are navigable for long distances. The existence of this vast network of navigable water greatly influenced the original settlement in the region. People tend to establish themselves along the river margin. The rivers were and are still the lifelines of the area. With the exception of few people and goods now transported by air, every thing still moves on the water. Before 1962 there was no road connecting the Brazilian Amazon with the outside world. Then the 2010 km Belem to Brasilia road was completed.

River navigation is heaviest along the Amazon itself and the larger tributaries like Purus, Jurua and Madeira as well as on the lower courses of the small

tributaries. The months of the high water stage of the Amazon from April to August are the busiest for river navigation.

Local boats are of three general types, sailing crafts which tends to be used in the outer area at the rivers mouth and along the coast of Maranhao, para and the territory of Amapa. Canoes which are used every where and the motorboats are used on the Amazon and the larger rivers. In the lower courses of the Amazon and its tributaries, the ocean tides determine when boats can best move upstream with the ebbing tide. In addition to the smaller craft, there are much larger river steamers, stern wheelers and oceangoing frieghters, tankers and passenger ships.

Early Explorations in the Amazon: In the early decades of the 16th century the Spainiards especially and the Portuguese to a lesser extent were tramping all over South American continent searching for gold and silver and for the Indians who could be enslaved. Few permanent settlements resulted from these expeditions, but a vast area was explored.

Sometimes observations were recorded as for example, an account of tall women warriors of interior of the continent. The explorers named them Amazons

after the female warrior in Greek mythology, and their name was given to that area of the continent. These "warriors" were probably Indian men who were mistaken for women because of their peculiar dress.[17]

While the Spaniards were busy consolidating their gains in the Aztec and the Inca region of central America and the North-west South America, the Portuguese occupied the Amazon. They began in small way in the 16th century. Throughout that century and the 17th century, there were short periods of economic activity by handful of people separated by long intervals of no activity.

The Portuguese and their Caboclo (copper colours descendants of mixed European and Indian Blood carried on rudimentary subsistence agriculture using Indian methods. They gathered drogas do sertao (back country drugs) such as aromatic roots, and Olegaginous seeds as well as valuable woods.

The first major turning point came in 1752 when the Portuguese embarked upon a kind of regional

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17 E. Bradford Burns, A History of Brazil (New York and London, 1970), p.20.

development program. They wanted to encourage colonization. The Portuguese overseas council promoted agriculture and raising of cattle. Several groups of Mission areas were sent to the area to christianize the Indian and assure their survival by encouraging farming. Military forts were built as early as 1616 at Belem and small trading outpost were scattered over the back country.

In the 19th century some scientific expeditions were carried out in the Amazon. In the 1850s two United States naval lieutenants William Lewis Herndon and Lardner Gibbon travelled to Peru and the Amazon region and made a survey of its conditions and future potentials. Many European studied and mapped parts of the area before and after the mid 19th century. One of the most important projects was a 1860 expedition to measure accurately the Amazon Rivers volume. This joint Brazilian-United States venture revealed that Amazons outflow was much greater than had been thought.

<u>Development of the Amazon</u>: The discovery of the rubber Vulcanization process in 1839 had a great impact on the Amazon region. It made possible the industrial utilization on a large scale of one of the areas greatest natural resources - rubber. The zenith of the rubber

boom in the Amazon, which attracted people from many parts of the world came around 1910. This was the high point of Brazil's rubber economy. After growing steadily from 1840 to 1913 it finally collapsed because of competition from the rubber plantations in Malaya. Asia already had begun to produce rubber in quantity due to the activity of an Englishman Henry Alexander Wickham who in 1876 surreptitiously had taken seeds of the heavea brasiliensis from the Amazon to Kew Gardens in London.[18] From there, the seedlings were transplanted to Ceylon where the well planned plantations were laid out by the Europeans. Asian labour cost a quarter of Amazonian labour and one Asian could tend over 500 trees on a plantation, while one Brazilian with great effort could tap a much smaller in jungle.

The year from 1870-1910 also witnessed the migration of almost 200,000 refugees from the North East Brazil into the Amazon area. They fled a land of scaring droughts to seek the riches of "balck gold" (Rubber) or at least to achieve physical survival in dark dripping Amazon forest, the year following 1874 also saw a major colonization of the Belem-Braganca

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18 E. Bradford Burns, A History of Brazil (New York and London, 1970), p.245.

zone which became the principal agricultural area of the Amazon region. The rural population densities there are still considerably higher than they are in many other parts of the Amazon Basin.

Since the 1930s, Japanese immigrants have introduced the cultivation of black (Java) pepper and have achieved great success with it on the right bank terrafirme, near Belem. They also launched what is now the most successful commercial crop of the Amazon area - Indian jute. It is grown in the floodplain over much of the lower Amazon region. The gathering and collecting activities continue, but chiefly as a background for more recent and very different kind of activities.

The 1950s and especially the 1960s witnessed striking changes in the Amazon region. The small territory of Amapa experienced a most impressive transformation due to large manganese deposit at Serrado-Navio which has been mined since 1950s. The mining company "Industria e comercio de Minerio (ICOMI) was formed by 51 percent Brazilian capital and 49 percent USA (Bethlehem steel) capital. It has invested money in subsidiary companies and project to diversify the economy of its immediate territory and larger region.

In the 1960s outside capital was attracted to north Brazil by exemption from 50 percent of the federal taxes on Income derived from the Amazon. As a result a large cement factory capable of supplying most of cement to whole Amazon Basin was built outside of Belem in 1962, and a petroleum refinery was built at Manaus and a small industrial park was developed on the outskirts of Belem.

These developments in private economic sectors are the reflection of policies and objectives stated by the Superintendent of the plan for Economic Valorization of the Amazon, when the plan was established in 1953. These objectives were:

1. to secure the occupancy of the Amazon territory by Brazil.
2. to build an economically stable and progressive society in Amazon region capable of fulfilling its social duties with its own resources.
3. to develop the Amazon in a way that parallels and complement the Brazilian Economy.

The physical requirement for developments are improvements in food supply, production of raw material for industry, a wider distribution of capital, better programmes for health, education and rehabilitation

of the workers. Of special importance is the new Belem-Brasilia highways and the projected highway to link the Amazon river from Cuioba on the headwaters of the Tapajos river. These overland routes offer a different and speedier form of transportation and they come from a new direction in South.

The traditional barriers to development of the Amazon basin - isolation from the rest of Brazil and Sparseness of population - were to be overcome by overland integration with the Economic and Demographic heartland of Brazil.

Population in the Amazon Region: The population of the Amazin basin is situated almost exclusively along the river. Among the four million people living in the basin, probably not more than 75,000 are local Indians. In Brazil alone there are no more than 50,000 Indians. Although the number of pure blooded Indian is small and most of them live far back in the remote areas of the region. A large proportion of the Amazon population has some trace of Indian blood. The largest population cluster is at the mouth of the Amazon centred on Belem and along the coast of Braganca across Marajo Island of Amapa. The second cluster lies along the Amazon river at the junction of the Rio-Negro in and around

the city of Manaus. There are in fact no cities of any importance that are not situated on a river. Many like Manaus and Santarem are found at the point where a major tributary joins the Amazon. These sites are obviously the natural locations for transhipment operations, commercial establishments and processing activities.

The dominant population group of the Amazon basin are the Ameri-Indians, whose population is being drastically reduced as a result ofthe contact with the outsiders. The majority of them are found in the Amazon basin comprising of at least four hundred separate communities. Within these four hundred communities there are some three hundred different tribal groups, with important cultural and social variation, in terms of language, kinship system, cosmology and forms of subsistence. In the northern-most state of Roraima the life world of the two principal indigenous groups the forest dwelling Yanomani and Macuxi of the grasslands of Guiana foothills are completely different. Even within relatively homo-genous ecological areas important ethnological dis-tinctions are to be found. In the Xingu national park each of the Seventeen indigenous group resident within its boundaries is in some important respect different from its neighbours.

The bulk of the regional population is of course not Ameri-indians but the result of five centuries of fusion between the Amerindians, Europeans and Africans. Within this population (11.2 million according to 1980 census and certainly substantially larger today as a result of migration to the region during the 1980s) fascinating differentiation can be observed, according to historical origins, ethnic compositions and economic base of the communities in question.[19] The indigenous population of the Amazon region make their living from fishing, from manufacturing of manioc flour, from tapping rubber, from collecting Brazilian nuts, from prospecting for gold or precious stones, from collecting sales parrila, from collecting and processing a multiplicity of palm fruits. There are traditional communities where the Amerindian element is predominant; communities with predominantly Afro-Brazilian characteristics, originating as refugees of runaway slaves; communities that have grown out of minning camps initiated in the colonial period - in addition to more recent forms of occupation. In fact the multiplicity of human economic responses to the possibilities provided by the immensity and diversity of the natural resources at hand is a topic that has barely begun to be studies in detail.[20]

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19 Antony Gross, "Amazonia in the Nineties; Sustainable Development or another decade of deforestation", Third World Quarterly, vol.XII, 1990-91, p.5.

20 ibid.

(b) Problems of Opening of the Rainforest:- General Approach:

Forestry has traditionally been regarded as an extractive or robber industry as Leong and Morgan have observed. Forests, which once covered about 60 percent of the earth's land surface, has been greatly redduced by clearance for agriculture, settlements and industry or felled for timber. Now only about a quarter of the land surface is covered by forests. Forest resources have been reduced but world demand for timber and timber products has continually expanded which resulted in overcutting and consequently destruction and degradation of forest. However, only recently the necessity of maintaining supplies of timber for future generation have been realized and therefore forestry in some parts of the world especially in Europe is being developed more akin to agriculture than to traditional methods of forestry. Care is taken to prevent erosion, to continually replant the felled trees and to fight pest and diseases. Nevertheless on a global scale exploitation is still far greater than replacement and consequently forests continue being greatly reduced.

The majority of the trees in the rainy forests are broad leaved and yield valuable hardwoods. Some tropical trees are noted for their extreme hardness

and are so heavy and difficult to work that they have to be killed by ring-barking several years before they are felled, in order for them to dry out a little. Some are so heavy that they can not float. The main commercial species are teak greenheart, logwood, ebony, mahagony and Ironwood.

Tropical rainforests in the world: In the tropical rainforest most of the trees retain their leaves for most part of the season and hence the forest appears evergreen. Tropical forests have several layers of vegetation.[21] The highest layer is of the larger trees which grow to a height of over 46 metre and have huge buttress roots and long straight trunks ideal for timber. Below these trees are lower layers of smaller trees about 9-15 metres high, palms, shrubs, ferns and grasses. In addition there is a bewildering varieties of climbers, creepers, and parasitic and epiphytic plants. There is a wide variety of species in any given area and trees do not occur in stands or groups consisting of only one species as do the trees of the coniferous forests. The rain forests are Luxuriant and characterized by a thick undergrowth of shrubs and small trees, which are found in three areas of the world.

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21 Goh Cheng Leong and Gillian C. Morgan, Economic and Commercial Geography (Ipoh, Perak, 1982), p.340.

Latin America: The largest expanse of tropical rainforest is in the Amazon Basin of Brazil, extending from the Atlantic coasts to the foothills of the Andes and from the Guiana highlands in the north to the tropic of capricorn in the south. Same type of dense forests are found on the Pacific coast of Columbia and in Central American countries from Panama to Mexico.

Africa: Tropical forests covers the lowlands bordering the gulf of Guinea from Sierra Leone in the West to Cameroon and Gabon in the east and in the Zaire Basin, especially in the lowlands of Zaire itself and its major tributaries, the Ubangi and the Kasai. They also appears in Eastern Malagasy and the Coastal plain of tropical East Africa.

South East Asia and the Indian Continent: Rainforest occurs in Malaysia, Indonesia and Papua New Guinea and in Coastal Lowlands of other South and South East Asian countries besides in Northern Australia. Tropical rainforests are found in India, Burma, Thailand and Indo-China as well.

The very different nature of forests in distinct climatic zones has an impact on the techniques of extraction, the economies of exploitation and the degree of mechanization. The underdeveloped economies of many

tropical countries in which such rainforest occur, means vast forests of such type are little used or exploited. This is mainly due to specific problems of opening up of the tropical rainforest for commercial exploitation.

Problems of Opening of Rainforest Region: Lumbering in the tropical forest is mainly faced with two kinds of difficulties - those related with extraction and secondly the lack of easy accessibility of major markets.

1. Numerous Species: The presence of many different species of timber is a relatively small area, some of which may be far more valuable than others, makes the location and extraction of more valuable trees difficult and expensive operation. As the trees do not occur in stands, the understorey vegetation, the tangled creeper, and thick underground aggravate the difficulty of access to the desired species. The more valuable trees are usually the largest and in felling them others may be destroyed or may hinder the felling operation. Besides the base of the trunk is usually too large to be cut through, so the timberjack have to do their work above the ground level. Finally the size of the trunk which may be several feet in diameter and the great

weight of the hardwood trees makes it extremely difficult to handle them, even with modern machinery.

2. Industrial methods of extraction: In most tropical areas the volume of logs handled is small because for one reason or the other modern machinery is not utilized. The rate of extraction being small, it is not always economic to employ large machinery plants and tools for its extraction. The timber used as domestic fuels in much of Latin America and Africa comes from smaller trees and therefore mechanization is unnecessary. The dispersed nature of the valuable trees also inhibits the use of machinery. In mountaineous areas as in parts of South East Asia, the steep slopes of the hill sides are an additional problem. In Burma, India and Thailand, where extraction of teak has long been an important activity, the use of elephants is the traditional method adopted for extraction of the timber. In most areas, however where lumbering is now on a commercial scale, as in Malaysia, Indonesia and some parts of West Africa, the use of machinery is becoming more and more common.

3. Jungle Environment: Not only are the tropical rainforests difficult to penetrate but roads once built are difficult to be maintained because of the

erosion and the rapid regrowth of vegetation. Moreover the jungle environment is far from hospitable. The damp, hot atmosphere, the presence of insects, pests and a variety of wild animals as well as the prevalence of a number of tropical diseases, all discourage the commercial exploitation of tropical rainforests.

4. Less Elastic Demand for Hardwoods: While some of the tropical hardwood species are very valuable and are in demand for constructional purposes or as Cabinet wood, they are not demanded for pulp and paper making, as yet, pulp making with hardwoods through possible is much more difficult and expensive. Moreover tropical hardwoods compete with temperate hardwoods which though in short supply are both more easily accessible and extractable. This factor has dettered tropical rainforest exploitation in the past. Nowadays the growth in demand for timber and pressure on the softwood is so great that the exploitation of tropical rainforest has become more and more a necessity.

5. Non-Replacement of Species: Tropical hardwood trees are large and take a long time to mature. Moreover, the pressing need for the softwoods, which can be turned easily into pulp and paper, is responsible for many areas cleared of their original species and

being replanted with pines and other fast growing softwoods. This in the long-run will contribute to make the forest less valuable as the highly priced cabinet and durable constructional woods will be exhausted.

6. Erosion: In tropical region where the rainfall is very high, as soon as the tree cover is removed or thinned, soil erosion rapidly takes place. This impoverish the soil and prevents the maintenance of the afforestation process with the original species. A poorer secondary growth takes their place. Regrowth may be entirely excluded if the soil is completely removed or if the stripping of the forest results in landslides or deep gullying.

7. Shifting cultivation: In many equitorial forest areas, the practice of shifting cultivation contributes to the degeneration of the forest in terms of species, due to periodic burning or due to the replacement by lalang grass or other useless vegetation. Moreover, shifting cultivation if unscientifically practiced, may lead to serious soil erosion.[22]

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22 ibid, p.345.

8. Transportation: The economic exploitation of the tropical forests is closely associated with the problem of transportation. The heaviness of the logs and the impenetrability of the forests on the one hand and the generally underdeveloped nature of the areas in which they occur on the other, combine to make the removal of felled log difficult. The largest areas of tropical rainforests are in the underpopulated and remote Amazon and Zaire Basin. The lack of communication, small labour supply and the absence of a basic local market hinder the development of such areas. The above observation is confirmed by the fact that the best developed tropical forests are those in areas near the coast as in South East Asia. In many areas the transport of logs is by water rather than land, the logs being floated down river to coastal ports or industrial centres. This is commonly the case in the Coniferous forests and is also practiced in some tropical countries. It is relatively cheap mode of transportation. In Burma for instance, teaklogs are floated down the Irrawadi River to Rangoon for export. Both the Amazon and the Zaire Basin, inspite of their network of rivers, the use of streams has not been utilized to any great extent. The heaviness of the

logs makes floating difficult besides the scattered distribution of the most valuable trees, forces the logs to be taken by land before they reach the river. Thus, river in the Amazon Basin are of limited value unless the trees can be taken to them.

2. Access to Market: While most of the temperate hardwood and softwood forests are located close to the major industrial areas and population centres such as Eastern U.S. and Canada, West Europe and the former Western USSR, most tropical rainforests are situated in sparsely populated areas and in countries having an incipient industrial development. Thus there is no local market to encourage the exploitation of tropical timber resources. At the same time the tropical areas are distant from the consuming countries so that transport costs must be added to the high costs of extraction when the timber is exported. Only those areas of the tropical forests which are more easily accessible as the South East Asia have been commercially exploited. Not only are the South East Asian forests located at no great distance from the sea on islands and peninsulas, but they are also fairly close to two areas where timber demands far outstrip supplies, namely Japan, where much of the original forest cover has long been cleared and Australia, where only about 6 percent of the land is under forest.

10. The Forest and the Man: For thousand of years, man has been gradually diminishing the world's forest resources by burning, clearing and felling trees for fuel or to make way for agriculture, settlement or industrial centres. For centuries it was a relatively slow process particularly in some areas. It has now been speeded up by population expansion and today in many underdeveloped countries, where wood is the main source of fuel, land is constantly being converted into agriculture and traditional extensive forms of agriculture such as shifting cultivation. In these areas the coverage of forests have been very rapidly reduced. This can be observed in many Asian, African and South American countries.

In Europe, much of the land was cleared for agriculture in early times. The development of industry led to the use of the remaining forests for fuel, in form of charcoal, and for constructional purposes, the shipbuilding industry until the nineteenth century, the coal mining industry consumed millions of logs as pit-props and more wood was needed for railway sleepers when the railways were rapidly developed during the last century. Finally, the use of wood-cellulose for making paper created the largest and evergrowing demand among all the uses for timber.

Other temperate areas suffered similar depredation of their forests. In China forests have been greatly reduced by the existence of a long established civilization based on agriculture. In North-America forest removal was very rapid. Settlers cleared the forest for agriculture and later for industrial purposes. The introduction of mechanization made forest exploitation both quicker and easier. The treatment of forests as an inexhaustible resources is responsbile for their rapid exploitation. Since the 19th century, side by side discovery of many new uses for wood has increased the rate of commercial exploitation of forests. When too many trees are felled the forest is hardly capable of reestablishing itself. Moreover even if small position of a particular tree is selected for cutting, this may degrade the forest by preventing the regeneration of that particular valuable species.

Forest degradation and intensive felling are not the only evils resulting from overcutting. In formerly clothed mountain or hill slopes - the removal of the forests have initiated soil erosion by gullying or sheet wash or has prompted landslides. The soil removed has helped to silt up river bed and consequently contributes to frequent flooding.

In most countries the realization of the importance of maintaining timber supplies occurred only in the 20th century. Problems could have been avoided if forests had been under state rather than private ownership or if legislation had been enacted earlier. Even today timber companies would not have taken to replanting and conservation practices but for government intervention and legislation regulating forest exploitation. Before, they naturally avoided the expenses involved in maintaining nurseries and in replanting cleared areas, besides they exploited the most valuable species without thought for future. Economy has not been the only factor which made timber company unwilling to replant, another aspect to be considered is the length of the time taken for the trees to mature. The benefit from planting could be reaped only after 50 to 200 years.

In the rainforests the rate of growth and reproduction is usually more rapid, nevertheless the large forest trees mature within 50 and 100 years. Thus only a few far sighted foresters were prepared to plant young seedling in place of felled trees.

Increased governmental control has greatly improved the situation in many countries but the progress has been slow in the underdeveloped world. Here despite governmental control, the lack of communication, remoteness, difficult terrain makes the supervision of forest a difficult task.

Where forestry is on a commercial scale as in Malaysia and Phillipines (the world's leading hardwood exporters) other sorts of problem arise and among them, surely the most pressing are controlling erosion in the tropical environment and the conflict between conservation and economic extraction. Extraction encourages the development of industry and boosts export earnings.

Much more rigorous conservation measures are needed in the tropical rainforest than in temperate forests, but when imposed, exploitation is usually inhibited, with a consequent reduction in exports and local industrial development. To make the matter worse, little research has been done on erosional problems in the tropical regions and thus it is more difficult to know which are the correct conditions to be imposed on the timber operators.

To conclude a brief reference must be made to the problem of forest fires, in dry season. Fires may start spontaneously in hot dry weather or be caused by lightening, but they are frequently started by human agencies.

Despite its huge areas of tropical rainforest in Latin America - it is a relatively unimportant timber producing area. Brazil is the only major commercial timber producing country and it is interesting to note that the bulk of its industrial wood comes not from its vast tropical forest in Amazonia, but from the Parana pine forests of the South. This is partly due to the problem of extraction in the tropical forest and the problems of transporting the logs to the industrial and population centre in the South-East.

(c) The Indian population in the context of Opening of the Brazilian Amazonia

In 1964 when the military regime was inaugurated and more particularly since the changes that have occurred in the Brazilian society from 1976 onwards. The Indian population of the country has been the object of government policies. A number of these changes can be linked to the policies of Ernesto Geisel administration (1974-1979) having been continued by his successor, President Joao Baptista de Figuerrido (1979-85).

For the tribal population, the key component of their current situation are the nation's civil society, the Brazilian national government and the religious organizations.[23] Any attempt to understand the present day situation of the Indian population must consider the complex dynamic of interaction among these components. Consequently, it is of primary importance to assert the long range goals and intentions of the above mentioned three entities.

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23 Urban, Greg, "Developments in the Situation of Brazilian Tribal Populations from 1976 to 1982", Latin American Research Review, 1985, p.7.

The civil society, its support groups and economic interests:

Within the context of the relations between the tribals and the civil society in Brazil, two distinct components must be referred to: the support groups, that have mushroomed since 1977 to aid the tribal populations, and the economic interests, such as ranching, lumbering and mining, in utilizing land and resources of the interland forest areas of Brazil.

(1) Support Groups: An important development since the end of the decade of the 1970s has been the proliferation of groups and organizations working on behalf of indigenous peoples in Brazil. In May 1977, the first National Association for Support of the Indians (ANAI) was formed in Porto Alegre, Rio Grande Sul and since then ANAI groups have proliferated in Bahia Parana and Rio de Janeiro. It was followed in April 1978 by the Committee on Behalf of the Indians (CPI) initiated in Sau Paulo and having spread to Rio de Janeiro, Sergipe, Alagoas, Acre, and Maran hao. Other support groups include the Working Centre for the Indians, (CTI) in Sau Paulo, the Group for the support of the Indian in Belem; the Group of Support of the Indian case, as well as groups focussing on more specialized problems such as the Committee for the

creation of Yanomani Park Reserve, (CCPY). It is difficult to keep track of all these groups and their activities as new groups are formed and old ones disappear.

The proliferation of support groups was not a fortuitous phenomena, however it was at least to some degree part of a conscious strategy for dealing with the multifaceted reality.[24] The nature of the Indian problem in Brazil varies from region to region according to the degree and kind of contact that has been established between the Brazilian national society and the tribal population, hence the creation of distinct regional ANAIs and CPIs.

The different groups also focus on different aspects of the Indian problem. Thus ANAI is more interested in legal issues, CPI in governmental policies and CTI in formulating and carrying out projects of economic development between the Federal Government and a monolithic tribal support group. This view also keeps in mind that the proliferation of support groups represented an attempt to adjust their objectives to the complex social and political realities in Brazil.

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24 Furtado, Celso, "Culture and Development: Brazilians What are we? Development and Peace, Autumn 1985, p.146.

In nature these groups to a certain extent resembles international groups that had appeared else where in the world, such as the International Work Group for Indian Affairs (IWGIA), Survival International Cultural Survival and Anthropology Research Centre (ARC). But the Brazilian groups differ in being more intensively involved in day to day developments in Brazil. Their membership consists primarily of Anthropologists, former FUNAI workers, doctors, lawyers, with each group having its own head quarters, elected officials and regular meetings.

To take an example the "Comissao Pro Indio" Sau Paulo (Committee for the Indians - Sau Paulo) (CPR-SP) publishes a monthly bulletin to disseminate information to its members. The Boletim contains information about national and international developments affecting Brazilian tribal population, statements of opinion by tribal leaders and news of upcoming events. The CPI-SP also publishes a series of booklets (Cadernos) for wider distribution that deals with key problems related to the Indian question. These volumes are invaluable for those interested in the current plight of the tribal Brazilian population, considering that CPI-SP members are in constant contact with tribal leaders and often they conduct interview for the press

about issues affecting indigenous peoples. This group is among the most active and visible in Brazil.

The CPI-SP differs markedly in its orientation from the Centro de Trabalho Indigenista (CTI) (Working Centre for Study of the Indian Culture). The CPI sees its role in terms of publicizing or bringing to the national consciousness, information about the Indian population. The CTI organises projects of economic revitalization among the tribal population themselves. Its members appear infrequently on television and make a few statements to the press, but they are more involved in the daily life of Indian villages as they spend a considerable time with the tribal population. They seek to make tribal society economically viable and preferably autonomous entities. They consider economic adaptation to changing condition as precondition for cultural survival.

(2) Economic Interests: Differences among these support groups are minor when contrasted with the economic interests operating in the Brazilian society. In a larger number of cases the economic interests view tribal population as obstacles to the opening of the interior for economic goals.[25] As tribal populations

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25 Urban, Greg, n.23, p.59.

are far weaker, than the larger Brazilian society, they obviously cannot resist successfully. Seeing from this narrow approach of policies, motivated by economic interests, the indigenous cause is a lost one. Yet it is precisely what support groups inside and outside Brazil are doing to effect policies of development in the tropical rainforest. In sofaras these groups can convince the authorities that natives and their culture are intrinsically valuable, that tribal people have certain historical rights to their lands, health and cultural integrity, in that measure the support group can hope to influence the policy. For this reason the support groups come in conflict with the economic interests, not because the latter have anything against tribal population in principle.

During more recent years, the level of economic development and penetration into the interior of Brazil and specifically in the Amazon region have been striking.

In the national context the economic miracle of 1969-74 has given way to periods of successive crisis fueled in its first phase by the energy shocks. The crisis has led the government to support projects designed to produce alternative sources of energy, such as ethanol as a gasoline substitute and the

opening of the interior for exportable goods in order to maintain the policy of modernisation and economic development and be able to servicd the foreign debt which had reached some sixty billion U.S. dollars by 1982.

The following developments directly affect the tribal population of the Amazon region. First, a number of hydroelectric dam projects; secondly, the Polonoroeste Project, a massive development project, funded by the world Bank for the State of Rondonia and Western Matto Grosso, to encourage the Colonization of the vast area and the construction of paved roads; thirdly, the Grande Carajas project, a large development undertaking located in the southern para and northern Maranhao. It will entail large scale mineral exploitation, steel and iron industries, lumber extraction, cattle raising, agriculture, and hydro-electric projects. The Grande Carajas project is of such an order of magnitude that it is going to be responsible for the creation of new regional social order.[26] At the time the Brazilian government estimated that the project required investment totalling sixty billion U.S. dollars, a figure equal to the Brazilian foreign debt in 1982.

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26 ibid, p.11.

By way of comparison, the entire Polonoroeste Project was budgeted for 1980-85 at 1.24 billion U.S. dollars. Caraj as involves a level of planning, co-ordination and financing previously undreamed of in the history of opening of the interior land of Brazil.

In sum these projects have served as an umbrella for economic interests - foreign and domestic - in their pursuits of economic gain and this very existence indicates the general trend of the national government in regard to the Indian questions. However, it should be added that the support group's policies, referred above, are having a marked influence on the implementation of the projects. The World Bank has funded the Polonroeste project conditional upon safeguarding the rights of tribal population's affected by the project. A similar stipulation was imposed on the Grande-Carajas Project.

3. The Role of the Government in the Opening of the Interland: Often no clear separation exist in Brazil between governmental and economic interests. Many of the companies operating in Brazil's interior are actually government controlled.

For example, the Vale do Rio Doce, which is the principal corporation involved in Grande Carajas, is a State controlled one. But it must be kept in mind that the government is a distinct party as it trancends its narrow economic interest as it is guided by the relevance of the Brazilian problems seen in this totality.

In this regard, the tribal population perforce figures into the governments policies and broadly impinges upon its actions as the Indian problem was consistently dominated by an image of Brazil as ethnically homogeneus with all cultural and racial distinctions vanishing through intermarriage and acculturation.[27] This view assumes that the tribal population must be integrated. Since the middle of the 1970s, the developments that have taken place are characterized not only by rapid change in the government's position but also a gradual evolution.

President Figueredo had continued President Geisels policies in two areas of central concern to the tribal population. First: a commitment to rapid economic development, specifically to large scale exploitation

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27 ibid, p.11.

of resources available in the Brazil's interior, a commitment largely fueled by the service of the foreign debt and secondly, the inauguration of the Political Abertura (the political opening) or the lessening of repression during the Geisel's administration allowed for the political debate and made room for the emergence of the support groups.

Upon closer examination, it becomes evident that tension exists between the two orientations when it comes to the Indian question. On one hand the development of the interior, accruing as it is of an accelerating rate, has been disrupting a large number of tribal populations. On the other hand, the policy of abertura has created conditions for disseminating information about the plight of the tribal population and for mobilizing public opinion in what concerns the devastation of eco-systems occupied by tribal population.

Opposition to economic abertura of the interland, as it has been conceived, has been conducted largely by the anthropological community and it is manifested especially at the level of the "Fundacao Nacional do Indio" (National Foundation for the Indian) (FUNAI), the government agency. In some measure the government has accepted the role of support groups and the

anthropologists as the watchdogs for the Indian rights in the midst of the economic development.[28] At the same time however the government had accelerated its own efforts at the integration of the Indian communities not applying the minimal self-restraints that it could exert. Consequently the anthropologists have been frequently forced to protect the tribal population from the very government organ that is supposed to be their guardian.

(i) FUNAI and the Anthropologists: FUNAI became the official government Indian agency in 1967 when it replaced the Service de Protecao ao Indio (Service for the Protection of the Indian) (SPT). To understand FUNAI's actions it is necessary to understand its position within the government. FUNAI was, during the military regime (1964-85), part of the ministry of the interior. Now it is subordinated to the minister of justice which has in the Brazilian administration a position close to that of the minister of law in India.

Although the President of FUNAI is a political appointee, it has been internally staffed, especially at the lower administrative levels, by career persons, many of whom are actively committed to the concept of

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28 ibid, p.12.

Indian rights. This staffing pattern has provided basis for tension with FUNAI itself. Due to its bureaucratic administration, FUNAI could somewhat resist initiative coming from above to integrate the Indians.

In this context, the president of FUNAI is in a position to play a pivotal role which seems to have been the case with Ismarth de Aravjo (1974-79), who was a general in the reserves and was guided by an overall integrationist view. Towards the end Araujo approached anthropologists from Brazilian universities. As a result three professors at the University of Brasilia started working full time for FUNAI, on projects in support of Yanomami Nambikwara and Macu. Anthropologists from the University of Sau-Paulo and elsewhere associated themselves with projects patronised by FUNAI. But in 1976, undoubtedly because of pressure from above, FUNAI contracts with University anthropologist were terminated and co-operation with the Universities was gradually phased out. In FUNAI's headquarter at Brasilia, there remained a sizable number of career bureaucrats many of whom were trained anthropologists.

It follows that, whatever the origin of the support, groups, their role as protector of Indian

rights, especially in opposition to FUNAI began to take shape. The first confrontation occurred over the so-called emancipation proclaimation, which would have modified the Indian Statute of 1978 and made the tribal people ordinary citizen with no special rights or protection. The support groups quickly perceived that such a change would leave the tribal population wholly defenseless in the face of a stream rolling national society. Fortunately, the opposition to the project has mustered enough force to persuade President Geisel in late 1978, not to sign the proclaimation into law. The matters has not died and the government has made seemingly endless attempts to accelerate the integration of tribal population.

The relationship between FUNAI and the anthropological community deteriorated badly under the presidency of Joao Carlos Nobre de Veiga (1979-81), a Colonel in the reserves. In 1980, Nobre de Veiga accused unspecified anthropologist of inciting the Indians. About the same time, bureaucrats in the ministry of the Interior accused Nobre de Veiga of incompetence. All of them were dismissed on July 1980. This led to a complete polarization, with all semblance of a dialogue between FUNAI and the anthropologists having broken down.

It is important to emphasize, however that the problem of the relations between the anthropologist and FUNAI can not be adequately understood solely in terms of the individual personalities involved. Problems are largely generated by the attempts to change the structure of the coexistence of Indian and non-Indian cultures. The anthropologists work to protect the farms and the government to do away with the very concept of Indian.[29] Consequently the confrontation is inevitable.

(ii) FUNAI and the Indian: Besides integration undoubtedly the other key problem that continues to confront tribal population is that of land, its demarcation and protection from the outside society. Every where in Brazil and more particularly in its central region, tribal populations are being hedged in as large scale agricultural and cattle raising interests move into the newly opened areas. Settler follow newly constructed roads and massive projects devour the whole Indian eco-system.

With regard to relations between FUNAI and the Indians the key developments in the latter part of the military regime has been not so much land in a direct

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ibid, p.15.

sense but in redefining the relationship between land and the Indian in a more broad sense.[30] Government initiatives have been directed at integrating the Indians which would eliminate the very category of persons designated as the legal heir to Indian territory. It is clear that the question basically resolves around land, who will occupy it and who will use it?

For sometime the government strategy has tactically changed. Instead of simply taking land away from the Indians, the emphasis has been placed on taking away from the Indian their very identity as Indians. The rationale was that if Indians were made into ordinary citizens, the land they occupy was no longer Indian land but alienable property.

It was in this light that government policies were conducted during the 1976-82 period. This period has witnessed a three-phased attack from the government firstly: emanicipation, to esta dualizacao (or turning over the Indian affairs to the individual states such as Amazones, Amapa, Para and so forth) and then the criteria of India identity.

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30 ibid, p.16.

Emancipation became a catchward in late 1975 and early 1976, but the initiatives for legal emancipation got underway only in which the support groups were going to crystalize. Anthropologist quickly perceived that emancipation a term with positive connotations, actually meant something negative, that is to take away from the tribal population every thing that was their own, such as their historical rights to land, their protection, under the law, their very identity as ethnically distinct groups. Only by marshalling public outcry, were the support groups able to avert that catastrophe.

In late 1978, President Geisel decided not to sign the proclamation into law.

No sooner had emancipation been averted than a new threat appeared on the horizon. The meance came in the guise of a process known as estadualizacao, members of the support groups once again able to identify the implications of the measure. State governments are even less able to resist the pressure from the local economic interests than the national government, estadualizacao would leave the Indians defenceless in the face of predatery economy. Consequently, estadualizacao could be easily used as a measure to do away with the Indians.

The struggle for land may be compared to a gigantic chessgame that has begun to be played in the year 1500 with Portuguese presence in Brazil. In 1500, 100 percent of the territory was the Indian. Today, Indians remain in control of only 5 percent, which represents no more than 160 remaining islands of Indian lands.

(4) The Role of the Religious Organization: Religious Organization - missionary groups may be divided along the traditional lines - prostestants and Catholic. There is a great deal of diversity among missionaries, the different Catholic orders (such as Salesians, Franciscans and Deminicans) and among the Protestant groups (from Summer Institute of Linguistics and the New Tribes Mission of Brazil to those of Individual Sects). Development related with the religious organization can nevertheless be best understood by differentiating Protestant from Catholic groups.

(i) Catholic Organization: It is difficult to over-estimate the role that Catholic missionaries and the Catholic Church itself played in the years of the 1976-82 period. The Catholic Church was a major force behind the abertura and Catholic missionaries fought in the frontlines, so to speak, for liberalization and for Indian rights.

The general developments may be traced to vatican council II in 1965, which resulted in the Catholic Church taking the side of the poor and underprivileged peoples through out the world supporting those who could not adequately defend themselves. In Brazil this group included the favelados or (the ghetto dwellers) in the cities, the peasant farmers (especially the poverty striken peasants of North-east interior) and the tribal population.

In this spirit, the Consello Indigenista Missionario or Missionary Indian Council (CIMI) was created in 1972, which formed an official part of the politically powerful National Council of the Brazilian Bishops) CNBB. Among its activities CIMI began publishing its Boletim, which contained materials on Indian rights and trasgression of these rights in Brazil. It was also due to CIMI, the first efforts to make tribal leaders conscious of the plights of their peoples and of the need to organise themselves.

In 1975, Missionaries began to reveal specific cases of land invasion among the Kaingang and Bororos. In the same year, a French Missionary was tried and expelled for his supposedly subversive missionary work.

In 1976, Padre Rodolfo Lunkenbein, who had denounced the invasion of Bororo lands a year earlier, was murdered by the fazendeiros (the land owing class) he had denounced. In late 1976, the co-ordinator of CIMI for all of northern Matto Grosso, Padre Joao Bosco Penido Burnier was assassinated by the police.

In 1976-82, Catholic Missionaries began to redirect their involvement with the Indians. Whereas before the effort was centred on transforming native cultures - through teaching Portuguese to the Indians and encouraging them to forget their own language and customs to bring about cultural revitalization. Thus although for eighty years the conservative Salesian Missionaries attempted to express Bororo ceremonial life, today an active effort is underway to maintain alive the Bororo's traditional ceremonies. Since 1970s, missionary work on behalf of the tribal peoples has perhaps been eclipsed by the activities of Secular support groups.

(ii) Protestant Organization: The principal protestant groups on Indian Affairs are the Summer Institute of Linguistic (SIL) and the New Tribes Mission of Brazil. Both continues to be mainly committed to the single goal of translating the Bible into the native Indian language. In pursuing this goal SIL has endeavoured to preserve basic Indian Linguistic structures and has

also been more respectful of the native cultures. The missionaries are treated much the way anthropological and linguistic researchers are treated. Staffed mostly by North Americans SIL contrast with the Catholic orders which are largely staffed by Europeans. This leads to the fact that SIL is associated in the public mind with the United States and it is viewed as a symbol of American presence in Brazil.

Although Protestant missionaries had a lesser participation than the Catholic missionaries in the recent pro-Indian Movement, some protestant churches based in USA and in Europe have contributed funds to the Secular Support groups in Brazil. The Protestant role in shaping measures in favour of tribal population in Brazil today is thus considerably more complex than the activities of protestant missionaries alone would support.

(5) The Tribal Population: The period 1976 to 1982 is of considerable significance because it was at this time that the tribal population first began to see themselves as having certain goals and interests that could be jointly pursued on a national level. It is due to the CIMI initiative that a meeting of heads of Indian tribes has taken place to organize the assemblies

of heads of Indian tribes. But more recent evidence shows that tribal populations are organizing meetings on their own.

For many years, Brazilian tribes existed in isolation, each with its own goals and locked in rivalries with one another as much as with the Brazilian national society. This situation largely arose because of the contacts among Indians in many cases have taken place only recently. For example, the Araras, whose territory lies within the areas of Grande Carajas project, were first peacefully contacted only in 1981. Other tribes exist that have yet to establish peaceful contact with the white men.

The history of these various tribes reveal certain common trends, such as tribal population's resistance to territorial encroachments. In 1910, the Kaingang of Sau Paulo attacked crews building a train line through their territory, just as the Kre-Akahore attacked road crews in their areas as late as 1973. In September, 1980 the long pacified Kayapo Indian attacked and killed twenty white men in retaliation for devastating forests within their territory. In May 1981, Shavante Indians invaded and sacked fazenda plantations, whose owners were encoraching upon their

lands. Araras continued the resistance to invasion and to pacification for some eleven years until 1981, and the Waimiri-Atroin, continues to resist pacification efforts. Thus land issues are common interests for most of the tribes.

There are some 160 distinct tribes in Brazil today, averging fourteen hundred persons per tube and ranging from tribes with only - a few members like the Diahoi (13 members) and Karapana (35 members and the Tukuna (15000) both of the Amazonas, the Yanomani (8400) of Roraima and Shavante (4300) of Matto Grosso. In most cases these tribes were formerly autonomous in what concerns, making their own decision about their future. When these tribes entered into contact with the Brazilian national society, they naturally saw as the counterpart, the chief of the Brazilian society, that is the president of Brazil.

The situation presents the enormous problem of trying to define common goals if the tribal population are to address the Brazilian nation with a single voice. The first move in this direction have already taken place during the decade of the 1970s when certain leaders have emerged on the national scene. They entered the public sphere as personalities in their own right and also as

speakers for the new Indian cause. As these leaders emerged conservative forces organized themselves in opposition to them and to the missionary activities. A number of indigenous leader disappeared, were assassinated or died in unusual circumstances like Angelo Kreta of Kaingang, who was killed in a mysterious car accident in 1980. The cost of organizing the tribal population are high indeed on the other hand, if the tribal peoples do not organise, the cost may be still higher.

Since its inception the Union of the Indian Nations (UNI) has been beset with problems of bringing order in the rich diversity of tribal population, internal feuding, the absence of certain key figures, almost non-existent financial resources, open hostility from FUNAI among others. The formation of UNI was made possible by the political <u>abertura</u>, that took place during president Geisel's Administration.

Important economic changes have accompanied the large scale development projects as major policy changes have occurred with the <u>abertura</u>. It is during this period that the secular support groups were formed, the work of CIMI has come to fruition and the tribal

population themselves have begun to organize the take an active role in the national politics. The complex inter-relationship among these developments and the rapidity with which they have occurred make it difficult to grasp the totality.

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C H A P T E R II

THE BRAZILIAN DEVELOPMENT MODEL AND THE AMAZON REGION FROM 1970 ONWARDS

Introduction to the Military Coup of 1964, and the Amazonian Region:

In 1964, Brazil experienced a military coup which has been identified by many scholars as a "revolution from above". Its outcome particularly favoured the agro-industrial and entrepreneurial elites, through changes, chiefly in the Brazilian economic scene. The transformations that took place favoured an increase in the foreign investments, the strengthening of the entrepreneurial capital and significant modification in the role of the Brazilian State in the national planning inclusively in the progressive opening of the Amazon Region.

When the military seized power, several basic political issues had to be addressed. Firstly, the regime had to legitimate its right to govern; secondly, it had to find solution for economic constraints such as wage demand, high inflation, import-industrialization policies, lack of investment and outlets which have hampered the national capital accumulation. Finally, it was necessary to give attention to the social and political problems of rural areas, the stagnant

agricultural production, low rates of investment and rural outmigration.[1]

The economic growth policies chosen by the military regime relied on increased international borrowing, a profound wage squeeze, an augmented transnational participation in the economy, side by side with political repression, control of monetary expansion and re-examination of fiscal policies.[2] The military initiated profound shifts in agrarian policies from 1964 onwards. The Brazilian Agricultural Sector in the late 1950s and early 1960s suffered from a lack of credit and investment capital that made the costs of inputs such as machinery and agricultural chemical stocks very expensive, while overvalued exchanged rates made Brazilian agricultural products relatively costly in the international market and national policies emphasized exports only as a vent for surplus production. On the other hand, the incipient structural changes and mechanization in the Brazilian agriculture began to erode access to land for tenants farmers and sharecroppers. The closing of the southern frontiers of Parana and Rio Grande do Sul further reduced agricultural options for the rural poor.

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1 Susana B. Hecht, "Environment, Development and Politics: Capital accumulation and live stock sector in East Amazonia", World Development (Oxford, June 1985), pp.662-84.

2 Belassa, "Incentive Policies in Brazil", World Development, vol.7, no.2, 1979, pp.1023-42.

The agrarian question, whose outwards symptoms were accelerated by rural to urban migration and increasing peasant activism, was addressed by the new regime by repression in areas of insurrection, such as the North-east and Parana and opening of a new agricultural frontier - Amazonia. Amazonian development obviated the need for land reform and implied a national plan to include the rural poor in governments development strategy.

The occupation of Amazonia was a theme in the government's programme associated with the military ideology of National Security. The large size of Amazonia (more than half of the Brazilian territory), with its sparse population and unpatrolled border, shared with eight other countries and with a history of border conflicts among them, insist a degree of disquiet about the area. This geopolitical understanding of the Amazonia was translated in the slogan "Integrar Para nao entregar" (to integrate to avoid surrender).

The concept of national security was closely allied to that of national integration, a policy dear to the military. In the context of Amazonia 'Integracao Nacional (National Integration) implied greater

economic linkages of the Amazonian hinterland to urban centres, faciliated by the development of the infra-structures and an attack on regional disparities reflected in the contrast between a developed centre-south and the backlands of the northeast and central north.[3] Further, through the occupation of Amazonia the riches of the area could be realized and contribute to overall welfare of Brazil.

(i) Operation Amazonia: Within the context of the Amazonia, the military coup of 1964, was particularly felt in what concerns the Operation Amazonia. In late 1965, the first military President, Castello Branco (1964-67) began what he described as a new era in Amazonian planning that would set the tone for the region's development. Accordingly planning would occur in an ambience where technical considerations would take precedence over clientilistic interests which had dominated the previous planning agency (SPVEA): The superintendency for the Economic Valorization of Amazonia. The greater emphasis on planning was an enhanced role of private enterprise in the regional development program. The government would provide infrastructure and general funding for the development

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3 Susana B. Heclt, n.1, p.63.

but the actual task of regional occupation would be carried out by the entrepreneurs.

The fundamental legislation for what was going to be called the Operation Amazon, was the Law 5.1744 of October 1966, which gave emphasis to fiscal incentives: 50 percent of a corporation's tax liability could be invested in Amazonian development projects, permitting consequently taxes to become venture capital.[4] The projects could be new ones or the expansion of the existing enterprises. Since several southern Brazilian land owners already had substantial land investments in the Amazon. The initiative was an attractive means of Valorizing existing holdings.

The government provided exemption of 50 percent of the taxes, for twelve years, to enterprises already established in 1966 and an exemption of upto 100 percent for projects implanted prior to 1972. Qualifying firms were permitted to import machinery and equipment duty free, as well as being exempted from duties for regional products (for e.g. timber). Besides the states of the region were entitled to furnish their own incentives and inducements (land concessions usually) while international credit lines, such as those from inter-

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4 Belessa B., n.2, p.64.

American Development Bank provided special agricultural development credit to be channelled for Amazonia. These incentives differed from previous development funds, in the magnitude of their resources and also important, is the consideration that land acquisition could be stipulated as part of the development costs.

As a consequence of such incentives the federal government would supply 75 percent of the investment capital needed for the enterprises. An important aspect of the legislation was the eligibility of foreign corporations for fiscal incentives - a thing that had not existed previously. Although foreign investments in Amazonia is often mentioned, its magnitude in the Agricultural Sector in Amazonia, is comparatively low, compared to Brazilian national investments.[5]

Foreign investment in Brazil, during the 1964-78 period was oriented towards the Industrial Sector rather than the agricultural and in the post 1975 period due to its emphasis on mining it engaged in rural activities.

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5 Susana B Hecht, n.1, p.64.

The combination of fiscal incentives and other credit lines resulted in an explosion of ranching in Amazonia. The peak investment period was 1967-72 as investors began to implant projects prior to the 1972 cut off date for the 12 year tax holiday. During these five years the Superintendencia de Desenvolvimento da Amazonia, SUDAM (Superintendency for the Development of Amazonia) approved some 368 new projects. By 1978, 503 cattle projects had been approved and of these 335 were new projects while 168 were reformulations or expansion of existing SUDAM projects. By 1978 about U.S. $ 1 billion of SUDAM funds had been invested in ranches or U.S. $ 2.6 million per ranch in direct investment.[6]

Throughout the 1960s, livestock production was publicized as the most promising investment to be made in the region. As the president of BASA, Banco de Amazonia (Bank of Amazonia) put it:

> Ranching....is an activity that has all the necessary conditions to be transformed into a dynamic sector of the Northern economy ....the fiscal incentives and road construction have generated a remarkable preference for livestock and for this reason, a new era in the sector is opened.

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6 ibid.

The extraordinary fiscal incentives and relatively low risk associated with ranching created an unparallel opportunities for gaining control of land investment in crop production in the Northeast (where incentives were also available) was comparatively risky as is most cropping in the North. As the land value increases, the desire for investment in the land becomes intelligible if it is kept in mind that land tends to hold value in inflationary economics. This was certainly the case in Brazil throughout the 1960s and 1970s. Besides the fact that infrastructural development in Amazonia increased the value of land, the influx of incentives permitted the acquisition of land. The development created a situation where the value of Amazonian land increased at 100 per year in real terms.

In the Amazonian economy, land itself and not its product, became a commodity, since, even lands whose productivities were declining increased in value in this speculative context.

2. The Programme of National Integration: By the late 1960s, considerable controversy began to mount over the expansion of corporate livestock operations, both for ecological and social reasons. In part as a consequence of very obvious bias towards large holders

and pronounced drought in the Brazilian Northeast in the 1970s, led President Medici (1969-74) to embark on a new policy for the Amazon.

The new National Integration Programme (Programa de Integracao Nacional) or PIN shifted the focus of attention of Amazonian occupation from a purely 'economic' to a 'social' perspective. Instead of Amazonia as best business, the new motto proposed was "O Homen e a meta' (Man is the goal).

Faced with the misery of the drought wrecked Northeast, the men without lands would be settled via Trans-Amazon roadway and other infrastructural programmes in the 'lands without men' in Amazonia. A more cynical version of the new programmes saw the trans-Amazon highway linking poverty to misery.

Regional Development during 1970s: In the 1946 Constitution of Brazil, for the first time in its history, particular emphasis was given to regional growth and since then regional development policies have been put forward as part of various federal government plans.[7] Several factors contributed to this

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7 Planning Brazilian Regional Development during the 1970s(A review), Geography, vol.61, 1976, p.163.

interest: on the one hand spatial concentration of economic activity in the southeast of the country contrasted markedly with the underdeveloped and largely drought ridden Northeast. Whilst on the other hand, the opening of the Amazon region and the central interior states hold potential for expansion of the country's resource base.

Inspite of the attempts designed to redress the regional imbalance as in the case of Northeast, or to expand the resource frontiers as with Amazon, the Southeast region as a whole and Sao Paulo State, in particular, continued to control the national economic activities. During the 1970s decade a national integration programme and two National Development Plans were undertaken. The Integration Programme and the first National Plan (1972-74) were prepared by the Medici Administration and were launched in 1970 and 1971 respectively. The Plan (1975-79) was submitted to the Congress by President Geisel on 10th September 1974.

The principle stated aim of the National Integration Programme was the interlinked development of the Northeast with the occupation of Amazonia and the centre-west states to be stimulated by the construction of two major highways - an East-West

route connecting the Northeast coast with the far western border and the North-South route linking Santarem and Cuiaba in the central plateau.[8]

The first National Development Plan - following the theme of the Integration Programme - gave importance to regional developments, employing the strategy of progressive decentralization, through the establishment of regional growth centres - agriculture and mineral in the state of Matto Grosso, Para, Goias and Amazonas.

The growth centres were viewed as a kind of counter-balance to the prosperous "triangle region" enclosed by the cities of Sau Paulo, Rio de Janeiro and Belo Horizonte. It was hoped that the migrants from the Northeast would be attracted to the North and the central regions, rather than to the metropolitan areas of Rio de Janeiro and Sau Paulo. At the same time it was made explicit that the South east region should continue to be the hub of Brazilian economic development receiving the largest input of capital, technology and infrastructure with direct benefits to both agriculture and industry.

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8 Malan Pedro S., and Regis Bonelli, "The Brazilian Economy in the Seventies: Old and New Developments" World Development, January-February 1977, p.204.

The 1975-76 plan closely followed the basic strategies of its predecessors. The further decentralization of economic activity in the country remained a major objective to be realized by consolidating economic growth in Southeast and channelling part of the wealth created there to other regions.

In the agricultural sector, projects of low capital intensity were implemented in the North, and Northeast and Central West, whilst by contrast the modernization and expansion of Agricultural production in the Southeast and South were undertaken using considerable capital inputs.

The planning strategy made explicit the fact that the development of the country as a whole was closely tied to the performance of the Southeast regions. Moreover definite fiscal and policy provision had been made to reinformce the position of this region as the economic core of the country.

a) First National Development Plan (PDN - 1): The first National Development Plan reiterated the themes of agricultural frontiers as the escape valves for surplus population, the importance of national security and the necessity of national integration.[9]

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9 Susana B. Hecht, n.1, p.673.

The goals of the entrepreneurs and of the advocates of small scale Amazonian occupation came into sharp conflict. The interministerial rivalry between SUDAM (Superintendency for the Development of Amazon) which had not retreated from its position that corporate development was the best means of Amazonian occupation. On one hand and the INCRA (Instituto Nacional de Colonizacao e Reforma and the Ministery of Interior on the other assumed the dimension of confrontation. During the 1970-74 period, INCRA, due to the pressure from a variety of interest groups, inter-agency rivalry, and its advocacy of social occupation came under sharp attack. By 1974, as the ecological and production problems became more acute, the Amazonian entrepreneurs were able to reassert this position that large scale occupation was the only rational means of occupying the region. The crises with INCRA, regarding the Amazonian policy were mainly linked to the ideas and ideologies of social vs. economic occupation.

Brazil's worsening economic situation in the 1970s, it was argued, made social concerns a luxury. In such a context ten areas of public land (under INCRA control) were sold to a group of entrepreneurs

for ranching development. Reis Veloso, then Minister of Planning, travelled along the trans-Amazon with 20 entrepreneurs to whom he offered land that had been reserved for colonization and agrarian reform.

3. The Amazonia and the Governmental Policies in the last fifty years : an overall view:

Since the end of the World War II, the Federal Government has been "Planning the development of Amazonia".[10] At different times during this period, the planning has been changed and executive agencies restructured. The factors that have contributed for the changes have been propelled by a more critical and better understanding of the strategic vision and of the Amazonian geo-economic planning aiming to rearrange social and economic conditions in a region that is vast, complex and distant from the planners offices. Technocratic self assurance not always based on a better understanding of the Amazonian eco-systems have been seldom responsible for the simplication of the region's problems and their solution. This, in turn,

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10 The 1946 Constitution established a development programme for Amazonia financed by a 3 percent share of federal, state and municipal regimes for twenty years period.

Mahar D., Frontier Development Policy in Brazil: A Case Study of the Amazon (New York: Praeger, 1976), p.6.

has been tempered with regional prejudices, that Amazonia is 'backward' its economic base is primitive, its social relations are archaic, its needs to be more like the modern Brazil. To complete the picture usually, when plans have gone awry, the failures have not been analysed, new plans have simply been drawn to replace the old ones.

Without trying to review in any great detail, the government planning policies for the region, it is most useful to look at some of the planning presumptions in the context of Brazilian economic growth and political culture as a whole.

Over the last thirty years, civilian and the military planners have from Brasilia determined the moves on a gigantic chess board: long distance highways were constructed through the forests, regional airports were built, free trade zones were established, tax holding were given to the ranchers and agro-industrial investors, heavy mining projects were approved and colonization schemes were set up.[11] The military-

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11 Antony Gross, "Amazonia in the Nineties: Sustainable development or another decade of deforestation", Third World Quarterly, vol.XII, Winter 1990-91, p.7.

bureaucratic rationale held that the state should provide the infrastructural investments that would enable capital to flourish and that regional development policy was determined by national security considerations. These mentality rested on the presumptions; that public participation and security were messy, inefficient and potentially subversive mechanisms, that modernity implies reproducing the production technique and consumption patterns of developed economies and that Amazonia is virtually an empty space.

The origin of the thinking can be found in the alliance forged between Brazil and the USA during the World War II, when Brazil began receiving economic aid and military training. From then on the USA replaced the UK and France as Brazil's external reference point in economic, cultural and military affairs. The growth of US post-war economy and the implementation of the policies of national security provided the justification for a programme of a rapid state-directed economic growth aimed at catapuling Brazil into a major league of economic power by the end of the century. The year following the military coup of 1964 saw the attempt to translate ideology into fact.

In some measures, this has been achieved over the last twenty-five years. Brazil's economy in the early 1980s was the eighth largest in the capitalist world, the largest in the southern hemisphere and larger than many European economies. Despite hyper-inflation and its external debt crisis in the 1980s the economy still showed positive growth rates. Growth however has not been accompanied by distribution but rather by the concentration of wealth.

In 1985, after twenty years of military rule the civilian government of Jose Sarney oversaw the process of constitutional reform, that led in late 1989 to the first presidential election since 1960. Despite their formal withdrawal from power, the military continued to exercise large influence in the government policy throughout the Sarney's Administration, especially over the policy towards the Amazon region.

Sarney's government incapacity to deal with the major economic and social problems facing the country and the high level of inefficiency and corruption within public administration led to the total rejection of his administration at the time of the first-round of the presidential election in November 1989. The candidate of the two parties in the ruling coalition polled only 5 percent of the votes between them.

The two second round candidates both represented a radical break with the past. Luis Inacio da Silva ("Lula") was the candidate of the workers party, based on the independent trade union movement, grass root organization and the progressive church.

The winning candidate, Fernado Collar de Mello, is a conservative maverick whose independent candidacy, openly was centred on the criticism of the government of inefficiency and corruption and offered the promise of radical (though barely defined) change.

The point therefore is that the presidential elections represented a turning point, the electorate's voting showed a clear preference for candidate claiming to represent a break with the status quo.

Brazil is at a crossroad in its history. In the case of the Amazonian opening the choice between authoritarian and democratic decision making in planning and exercise of power, between the economy responding to external factors and the one mainly associated with domestic well-being.

Seen from a critical approach, the policies followed by successive Brazilian governments have contributed to the development of social and

environmental crisis in the Amazon region. Moving towards the west from the mouth of Amazon River, it is possible to identify a rosary of conflicting situation. First, in the states of Para, Maranhao and Tocantins, the enormous Carajas regional development project is based on the exploitation of substantial mineral reserves accompanied by the creation of the necessary export infrastructure (railways and post-facilities), mineral transformation (aluminium smellers in Belem and Sau Luis, pig iron smelters along the railway, the Tucurui hydroelectric dams and associated tax holiday schemes for agro-industrial investments. These large projects are responsible for high levels of social violence as ranchers and others attempt to evict peasants and Indians, as well as deforestation and predatory logging for export and charcoal production, and the forced resettlement of rural communities to enable infrastructural investments to be made.[12]

Secondly, in Northern Matto Grasso, private colonisation schemes brought into the tropical forest, colonists from southern Brazil, of European extraction,

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12 A.L. Hall, "Agrarian crisis in the Brazilian Amazon: The Grande Carajas Programme", Journal of Development Studies, 1987, pp.522-52.

used to small-scale mixed farming in temperate zones. These families were forced to migrate by increasing concentration of land and the capitalization of the agriculture in the South, particularly by the boom in soya production. The region also suffered from the implantation of ranching in forest areas and from discharge into the Amazon tributaries of chemical fertilizers used in growing soya in the savannah areas of the state.

Thirdly, the polonoreste, a regional development programme, financed by the World Bank and centred on paving of the Cuiaba - porto velho highway, complimented by colonization schemes resulted in an uncontrolled rush of landless migrants from other regions of Brazil. As a consequence of all these efforts, the region observed a high level of deforestation, indigenous lands were invaded, and major public health problems arising from the malaria epedimic.[13] It typifies the conflicting situation in eastern half of the state of Acre between the newly arriving ranches and rubber tappers who resisted deforestation and eviction.[14]

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13 B.H. Millikan, "The Dialectics of Devastation: Tropical deforestation, land degradation and society in Randonia, Brazil, Master's thesis, Department of Geography, University of California, Berkeley, 1988.

14 Antony Gross, Fight for the forest: Chico Mendes in his own words (London:Latin American Bureau, 1989).

And finally, along Brazil's northern Amazon border, the armed forces, Calha Norte (Northern Headwater) project was aimed at creating a network of military installations, which would form the nuclei of future strategically located civilian settlements. Among the other consequences, the project facilitated the arrival between 1987 and 1989 of an estimated 45000 garimpeiros into the area traditionally occupied by the Yanomani Indians, the largest relatively isolated indigenous group in South America.[15]

In the portion of the region as yet relatively untouched by planned intervention of the type described above - most of the state of Amazonas and Western half of acre - the settled population suffers from restrictive labour relations (including the persistence of debt bondage), exploitative market relations and inadequate social services. Social conflicts have not necessarily manifested in the way described above, but they are underway. The transformation of the natural resources, particularly land, from a use value to an exchange value is an inevitable

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15 Garimpagen is defined as small, informal sector mining in Brazil miners of this type are called Garimpeiros: their diggings and the communities which form around them are known as Garimpos.

Reference: D Cleary, Anatony of an Amazon Goldrush (London: Macmillan, 1990), p.1.

fact and it entails, as a norm, the exporpriation of original occupants. The development of a free market in the region has to be complimented by the creation of entitlements to land and safeguarding the rights of traditional population.

The phase of planned development followed the military takeover of 1964 and it was responsible for a period of repression, inspired by the national policies of internal security and counter insurgency. Peasant communities all over the region who sought to resist expropriation faced intimidation and their leaders lived under the threat of assassination often at the hands of members of state police forces, this was over and above the private violence of the land-owners.[16] An attempt to create a rural resistance movement of peasants in Southern Para, who were suffering at the hands of new rachers, was ruthlessly crushed by the Armed Forces in the early 1970s and served to confirm the military thesis that manifestation of resistance constituted subversion.

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16 According to MST (landless workers movement) and MIRAD (ministry of land reforms) between 1964 and 1965, 1104 rural workers, community activists were assassinated. Between January 1985 and mid 1975, the figure was 458. A substantial proportion of these murders occurred in land disputes in Amazonia.

(a) Opening of the Roads: Analysing the opening of the Amazonia, in recent decade, academics talk of the pull and push factors that have driven migration into the region.[17] The pull has been roads, which from 1960s linked the Amazon to the southern Brazil for the first time. The push has been mainly the sharp fall in the employment opportunities in the south caused by changes in the countryside, largely due to the spread of mechanised soyabean production.

The construction of the highways into the heart of the Amazon rainforest have accelerated the pace of the attempt to integrate the tropical rainforest in the Amazonia to the national economy. Upto the decade of the 1960s the rainforest had only been chipped away at its edges. The region was protected by its sheer inaccessibility.[18] That changed when a paved highway connected the previously undisturbed areas, with busting Brazilian ports.

During the military period (1964-85) Brazil witnessed between 1968 and 1978, what has been

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17 Times(London), 12 December 1979.

18 C.J. Barrow, "The Development of Amazon", World Development, August 1989, pp.192-214.

identified as an economic miracle. The economy grew at 11 percent annually and the process of industrialisation took place in certain regions. Nevertheless this process was not rapid enough to absorb the high population growth in the urbanised centres, thus the governmental policies encouraged migration to the central plains and to the Amazonian region. For this roads were built in remote areas to promote the economic development of the region. The construction of roads and laying down of other infrastructural facilities provided stimulus to the opening of the central plateau and the Amazonian region. They increased the accessibility into those regions and expanded the resource frontier of the Brazilian economy. The construction of roads in the heart of the Amazonia brought the resource potentials and the region's endowments within the reach of the country's industrial centres. The resource of the region would have had no meaning but for the roads.

The occurrence of rich deposits of mineral resources and with the purpose to exploit them economically, mining and industrial companies as well as the state government have resorted to the construction of 'movement corridors' in the form of roads, highways,

railways and ports. The development of transport infrastructure was the first stepping stone to the progressive opening of the region for a successful exploitation of its potential resource. It also made possible the integration of the economy of the south with that of the newly opened economy of the North.

The construction of roads like the Belem-Manaus and Brasilia-Acre highway, among others had served the purpose of channelling to the north, the surplus population from the south through the state controlled colonization schemes. With the completion of each new highways the Amazonia experienced new influx of migrants from other parts of Brazil. This process soon brought about the peopling of the region, hardly occupied by man a couple of years ago.

The need to integrate Brazil's northern region into the national economy and society has been a constant factor in the orientation of federal policies and programmes through out the post-war period. Such initiatives sought to combine the physical occupation of the territorial space with the generation of export earnings. Although the Amazonia includes over half of the Brazil's territory, no roads connected it to the South until the late 1950s.

In 1970s, massive investments were made to connect Atlantic coast of the Brazilian Northeast with Peru. The construction of the Trans-Amazon highway cutting the country South of the Amazon river cost approximately US $ 500 million. Another 500 km highway along the northern frontier was planned and its construction was not completed because of its high cost. These major road systems stimulated further laying out of secondary and feeder roads, while the huge costs of these undertakings added directly to the central and regional financial difficulties, the long term economic contribution made by the highways have been limited due to the character of the economic activities.

In addition to accelerating the mining, the roads have stimulated predatory lumbering of valuable woods, with no attempts to replace them with equally valuable species and large scale pasture formation which depends on nutrients released by cutting and burning huge areas of forest to plant exotic grasses. Lumbering activities and large scale cattle ranching have had a devasting effects on the natural environment and on rural population.

Traditionally, the combination of access through fluvial transport, the fertility of the varzeas and the availability of adequate protein through fishing, concentrated the Amazonian population along the main river courses. The construction of roads has put in contact, the population of sparsely settled upland areas with the road building crews and with the settlers who followed them. These new comers brought with them, health problems and a wave of violence which have affected particularly the indigenous groups, who occupied the remote terra firme and threatened the tenure and subsistence of siolated peasant groups which combined horticulture, vegetable extraction, hunting and fishing along the upper reaches of the Amazonian territory.

The policy to connect the Amazonia to the rest of Brazil through highways has been responsible for drastic changes in the land use and land rights. The completion of the Belem-Brasilia highway in 1959 provided access to extensive terra-firme lands and enabled their communication with the market. This stimulated a massive immigration by the dispossessed peasants from other regions, especially from the North-east where mechanization and ca italization of agri-culture had disrupted traditional forms of land tenure and created a growing landless class.

The influx of large ranching and lumbering enterprises quickly followed the peasant migration. Using their great political and economic power and frequently force, they were able to control land which the peasants had cleared and then to take advantage of the labour pool created with their expulsion from the land they had opened.

More peculiar was the impact of road construction on the Indian settlement. The incapacity of FUNAI to protect the Indians from the road builders is one of the clearest example of subordination of the agencies responsible for preservation of the human and natural environments to other agencies charged with the promotion of rapid industrialization and capital expansion. The fact is felt particularly in the question of new mining claims in the Indian rights which pose a continuing threat to both present and proposed Indian reserves.

The opening of the Amazonia is rooted in major policy decision, just as the steampowered railroads moved North-American Settlers westwards in the mid 19th century, the Brazilian government with ample aid from international development Bank, began building penetrative highways to move men and machines into the

western and northern frontier. The poors were coaxed by the government advertising and promises of good cheap land.

The polonoreste programme launched in 1981, with over US $ 440 million as loans from the World Bank sought to integrate the inner Amazon into the national economy by paved highway BR-364 from Cuiba in Matto Grosso, to Porto Velho, capital of Rondonia. With the construction of BR-364 highway came a massive wave of migration from South of Brazil. To the World Bank, BR-364 was the centre piece of one of the biggest loan projects, the North-West Pole, a $ 450 million and programme to help Brazil develop its vast frontiers. If it were not for the highway, there would be no Rondonia said, Jeronimo Santana, Governor of Brazil's youngest state.

From 1970s onwards there was a conscious effort on the part of the military regime to strengthen the process of physical and economic integration through a roadnetwork expansion and secondly to enhance the process of industrialization and economic growth which in the mid 1960s was limited in scope and area within Brazil. The planning and construction of roads in the mid 20th century was a highly organized activity involving the

federal, state and municipio governments. The tendency has been towards integration and co-ordination of all levels of plans into a comprehensive and sensible strategy which has as its goal, the physical integration of practically all parts of Brazil's national territory. The importance of roads in developing countries cannot be overestimated. Although underacted by those who regard them as an engineering feats, in reality the highways are revolutionary agents of economic and social change. They play the role of social and economic life-lines of a country. The policy of aggressive extension of transport routes aimed at: (i) to assure that, there will be many more places and areas served by highways; (ii) as a result ofthis, more intersections are going to be created serving as local crossroads, market centres, storage depots and governmental, political and population foci; (iii) more roads will be paved or at least of an all weather type of construction and maintenance; (iv) through planning and construction of roads, the remotest corners of the country will be incorporated and integrated to the national life; (v) the present day road construction programmes are focussed on consolidating the existing networks and existing roads and extending main axis roads in order to link them with the capital of Brasilia;

(vi) and lastly identifying the Amazon river as part of the national circulation system of transportation.

(b) Settlement of Population:

Brazil witnessed its "Economic Miracle" between 1968-73 when the economy grew at an average of 11 percent annually. The "miracle" centred on the process of rapid industrialization was achieved in regional pockets. As the process was not rapid enough to absorb the high population growth in urban centres, the government encouraged people to migrate to the central plains and to the Amazon. Roads were built to these remote areas, side by side industries and agro-business were promoted and tax incentives were provided.

Considering that about half of the area of the country is covered by the Amazon rainforest, the Brazilian planners at the time imagined that there were no limits to growth and that clearing the Amazon rainforest was key to prosperity.[19] It was their vision of an agricultural Amazonia, incorporated into the national territory that provided impetus for the state sponsored colonization schemes.

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19 News Time, 5 February 1985.

During the 1970s more than two million people moved from the traditional settled areas to the Amazonia.[20] One aspect of this population displacement was the enormous carajas regional development project, in the states of Para, Maranhoa and Tocantins, based on the exploitation of substantial mineral reserve accompanied by the creation of necessary export infrastructure (railway and port facilities), mineral transformation of (aluminium smellers in Belem and Sao Luis), pigiron smellers along the railway, the Tucurui hydroelectric dam and associated tax holiday for the agro-industrial investments resulted in large influx of migrants into the interior of the Amazon from different parts of Brazil.

In Northern Matto Grosso, private colonisation schemes brought into the tropical forest, the colonists from southern Brazil of European extraction and used to small-scale mixed farming in temperate zone. These families were forced to migrate by the increasing concentration of land and capitalization of agriculture in the south, largely due to the boom in soya production.

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20 Keith Bakx, "Planning agrarian reforms: Amazon Settlement projects, 1970-86", Development and Change, vol.19, no.1, October 1988, pp.533-53.

The well-known polonoroeste, a regional development programme, financed by the World Bank, centred on paving of the cuiaba to Proto Velho highway complimented an ambitious colonisation scheme.[21] The result was an uncontrolled rush of landless migrants from other regions of Brazil. The implementation of the programme was responsible for high level of deforestation, invasion of indigenous lands and major public health problems arouse from malaria epidemic.

A different situation emerged in the eastern half of the state of Acre. The conflict between the "Seringueiro" the traditional rubber tappers, and the newly arrived ranchers were obvious, the former resisted deforestation and eviction.

Along the Brazil's northern Amazon border, the military Calha Norte project, creating a network of military installations, aimed at forming the nuclei of future strategically located civilian settlements. The project facilitated the arrival between 1987 and 1989 of an estimated 45,000 garimpeiros into the area traditionally occupied by the Tanomani Indians, the

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21 Guardian Weekly(Washington Post; Manchester), 14 February 1992.

largest relatively isolated indigenous group in South America.[22]

The settlements in the central-western region, according to local officials, follows a definite pattern. Each day new settler families arrive by diesel buses and in a matter of months raising up small dwellings with a population of 200 to 2,000 including banks, schools, hospitals, police stations and a strip of night clubs. All these bustle is the consequence of the highway BR-364 stretching 1,300 miles through the three states, from Matto Grosso deep into the forest of Rondonia and Acre.

In 1984, when the thousand miles of surfacing was completed, the two lanes of black top were hailed as an important assault in Brasilia's long campaign to occupy the Amazon borderlands and to jolt the scattered rainforest communities out of their timeless torpor.[23] Barrelling along the tarmac have come, a number of lumber companies, goldminers, cattle ranchers and a rush of land hungry colonos or peasant settlers in the Amazon region.

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22 Garimpagen is best defined as small informal sector mining. In Brazil miners of this type are called garimpeiros, their digging and the communities which form around them are known as garimpos D Cleary, Anatomy of Amazon Gold Rush, London Macmillan, 1990, p.1.

23 Times(London), 18 July 1989.

During the military regime, the administration dreamed that an all weather highway would be the "back bone to the conquest of the frontier".[24] With the road came the poor colonos by the legion. In 1978, 12,000 newcomers migrated to Rondonia. They are the result of lopsided development, expelled from slums of Brazil's clogged mega cities or from mechanised farms in the south or from the parched Sertao of the poor North-east. All of them searching for a bit of El Dorado. As a consequence, the last two decades saw a large number of spontaneous settlements coming up in the remoteness of the Amazonian territory.

Opening of the Amazon region by the military regime eversince 1970 made the long neglected interior more alluring for the agricultural business and extractive industries and encouraged many settlers into the wilderness of Amazon. With the highway and other roads criss crossing the interior of Amazon, there emerged a plethora of problems stemming from the clash of cultures and presence of hordes of unscrupluous prospectors, small holders, foresters and criminals.

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24 Christian Science Monitor(Boston), 6 April 1985.

The regimes problem was what agricultural policy it could pursue in the context of a dependent capitalism which have been unable to develop the vast interiors and the countryside. The general lines of its tactics have been analysed by Celso Furtado, who defines it as the search for social stability through "pastorization". The Brazilian version of the economic occupation of the interior presents the following features:

(i) The under-employed population in the urban zones and the surplus population in general are encouraged to still unoccupied lands, particularly to central Brazil and to Amazon in the North. The agricultural production of the newland was to be absorbed by the urban centres. The Arable crops were restricted to the best quality land so that they could compete in the cities with the products of the newly cultivated regions of the interior. Land previously sown were turned to the livestock and the main stress was given to livestock ranching.

(ii) the belief that migration to the great expanses of the interior would tend to extend the economy horizontally and that pastorization plan would substantially reduce the social tensions led to the shift of the regimes attention to the vast expanse of the Amazon region.

(iii) the policy, outlined on various occasions by different planning ministers since 1964 had been defined more precisely by General Medici's administration which put into practice what is called the Colonisation Plan.[25] This provided for migration of 1.8 million people, of which 45 percent came from the over-populated northeast. The decade of 1970s saw a massive dislocation of population from the over-populated regions of the south to the vast expanse of the empty north. The colonisation plan of the decade 1970s flooded the Amazon with poor peasants, voluntarily uprooted from the northeast. This was an attempt to dilute the class contradiction in the country-side spatially. Since the Industrial sector was unable to absorb the peasant labour force and it was also incapable of rasing the standard of the great mass of the population, the westward march intended to perform two functions, on one hand, it was meant to take the edge of the class contradiction prevailing in the northeast and on the other hand, it was meant to diminish the influx of the peasants to the slums or favelas of the urban centres.

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25 Hecht Susana, n.1.

(iv) the colonisation plan brought the ruling class other advantages as well. Land in the Amazonas and central Brazil were bought on a large scale by the Brazilian and foreign companies especially U.S. To open the region economically, all that was missing was labour. The colonization programme therefore provided the labour and manpower resources. In the absence of an efficient wage, labour, the pioneer landowners bought slaves.[26] The evidence of labour trading between the northeast and central Brazil was corroborated by the regime itself.

During the past two decades the Amazon has been used increasingly as a stop-gap solution between the Brazilian national programme for rapid industrialization and the socio-economic integration of the country. The Amazon has come to represent a great reserve of national resources to government planners searching for ways to reduce the foreign indebtness caused by Brazil's heavy reliance on international capital. Mining, lumbering and ranching have been seen as an effective way of tapping these resources. The states

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26 According to O Globo, Children are sold for eighty new cruzeiros per head in the interiors of PARAIBA state in the Northeast. An article for 13th December 1969 reported the discovery of fourty children bought in this way, working on a rice plantation in Matto Grosso.

policy for the Amazon were also conceived by political considerations and the preoccupation with territorial security and internal order. As the idea of an Amazon rich in natural resources were incorporated into the national economic policy, the old fear that other nations might wish to control these resources were resusciated. The mechanisation of agriculture in the centre-south and the recurrent droughts in the North-east had swelled the ranks of the landless peasants of Brazil, increasing political tensions and demand for land reform which the state hoped to alleviate by opening the Amazonia to colonization. The colonization of the trans-Amazonia was a singular failure. The process repeated itself at each stage of the highway construction, the INCRA tried to block it, and when this failed, it tried to co-opt it.

The POLO-Amazonia Programme: The official statement of the middle 1970s changed from accentuating Amazonia as the ideal environment for the peasant former to emphasize the need to protect the Amazonian eco-system from their predatory activity. The implication being the large scale ranching and mineral projects could do this. The programme of Agro-ranching and mineral poles of Amazonia (POLO AMAZONIA) under the co-ordination of SUDAM, was introduced and fifteen areas were

chosen in relation to their conditions for ranching and mineral extraction. By May 1974, SUDAM had approved 498 projects in the region of which 89 percent were located in just three states - Amazonas, Matto Grosse and Para, where the larger number of the ranching projects were located. It was here that the multi-national corporations had their principal properties.

The emphasis on ranching is significant from two points of views. Firstly, job creation is minimal. Most employment in ranching sectors is temporary and concentrated in the initial deforestation prior to seeding. Secondly, the wholesale destruction of large areas of forests, with its convertion of pasture for cattle, erodes the economic basis of livelihood of the resident population, subsistence farmers, rubber tappers and indigenous groups. The advance of the ranching front was accompanied by corresponding increase in the population from other parts of Brazil and increase in incidence of rural violence, contrary to the government's statement of the time. Amazonia was not an empty place to be populated, rather the ranching front took the form of an invading force, devastating land, destroying forest covers and expelling the Posseiro (home steader) and Indians.

By mid 1970s, violence against the resident population of rural Amazonia was the rule rather than the exception. The methods used varied from the forging of land titles to arson and murder. In 1977 alone such disputes between the Posseiros and ranchers involved a total area of over 800,000 sq. km and approximately 7780 families, about 40800 individuals suffered some form of violence or intimidation at the hands of the new owner who came from the south.

The POLO AMAZONIA programme represented a step towards the private control of land in the Amazon and thus the separation of the direct producer from the basis of his production. The social and ecological violence that its programme endeangered, covered as they were by the national and international press, forced the government to change once again and invoke provision of land statute, the expropriation of land in the "social interest", as means to resolve the issue.

INCRA Directed Colonization in Rondonia:

INCRA's new colonization projects sought to promote the expansion of rural enterprises and eliminate minifundios and latifundios - a strategy that essentially saw agricultural development in terms of the extension of small - to medium scale capitalist farming.

The new model for INCRA projects in Rondonia was the integrated colonization project. This was of a less grandiose design than those on the trans-Amazonia and centred on the creation of relatively self-contained units. These were located along the newly constructed Brasilia Acre highway, the BR-364 that also passed through Rondonia.

The federal governments claim to 10 km on each side of the highways was extended to 100 km and in states such as Rondonia and Acre, which borders Bolivia and Peru, the federal authority claimed a 150 km wide band laong the international boundary.

Prior to the construction of highway, Rondonia was relatively isolated. Acess was limited to the river routes that led eastwards to Manaus and Belem, a journey that took several weaks to accomplish, with the completion of the first stretches of the BR-364, the state became articulated with the south of the country, thus the way was opened up for its occupation by small colonists, capitalists enterprises. Notwithstanding its size of 243044 km, Rondonia had a population of only 113659 in 1970, less than 0.5 inhabitants per sq. km. With the opening of the BR-364 and the announcement of INCRA's colonization schemes, the

state became the object of a significant spontaneous migration. By 1980, its population had risen to 492-810 an increase of 333.59 percent. INCRA's integrated colonization projects were projected to settle 234,39 families in Rondonia. The Central Government plans for the Amazon, whether as a region expected to resolve the balance of payments and population problems or a vulnerable region needing to be protected, have involved direct government investments and massive subsidies to private enterprises. The national government used two forms of stimulus to capitalist enterprise in the Amazon - concessions of resource rights to foreign companies and tax credit and fiscal incentives to Brazilian companies.

The extraordinary fiscal incentives and seemingly relatively low risk associated with ranching created an unparalleled opportunities for gaining control of land.

In 1966, the Brazilian government created the superintendency for the Development of the Amazon (SUDAM) to function as a co-ordinator of federal intervention in the region. SUDAM's prime directive was to free Amazonia from its historical dependence on extractive industries, notably rubber and Brazilian nuts and with the aid of a programme of fiscal and financial incentives, it sought to attract modern industries such as ranching to develop the region.

In 1971, the state launched a programme which aimed at dealing specifically with land distribution and inefficiency in land utilization. This was the programme for redistribution of land, PROTERRA whose stated aim were the creation of incentives for industrialization of agricultural products, the modernization and commercialization and distribution structure for agricultural products and to provide incentives for small rural producer through the redistribution of expropriated land. The programme sought to mobilize an agricultural surplus through the expansion and subsequent incorporation of rural petty commodity production. The priority was not the small producer exapnsion perse but the expansion of such production as the most practical means of achieving the required growth input from agriculture in the shortest possible time.

The agency, given the task of implementing this part of the programme was the National Institute for Colonization and Agrarian Reform (INCRA). Here then are the two crucial elements related to the agrarian question. Firstly, given the need for export earnings, the expansion of capitalist agriculture is being promoted. In terms of Amazonia, this was translated into SUDAM's programme of infrastructural development

and incentives to attract large scale capital intensive ranching projects to the region. Amazonia is being treated as a resource to be exploited to solve economic problems external to it.

The INCRA Directed Colonization: Unlike SUDAM's directives, which was regionally specific, INCRA's brief was a broad concept of reform on a national scale. Its colonization programme focused on resettling the peasants without land of the Northeast on the "land without peasants of Amazonia".

The settlement projects along the newly constructed trans-Amazonian highway were seen as a means of resolving two of regimes most pressing problems : generating a marketable agricultural surplus and easing social tensions in other rural areas. INCRA's new programme foresaw the orderly occupation of the tract of land 10 km wide on either side of the highway that had been specifically reserved for INCRA's use. The aim was to relocate some 100,000 families, approximately half a million person in a time span of just five years while colonization of Brasilia-Belem highway a decade ago. By 1980, the trans-Amazonian settlement projects were to house one million families.

The first directed settlement were inaugurated on the stretch of the highway between Estreita and Itaituba in 1972. But the project soon ran into severe problems. Firstly, eager to mount a successful operation, INCRA began to recruit colonists from outside the Northeast who were experienced commercial farmers, knowledgeable in the use of machinery, pesticides, and credit facilities. Secondly, its aim were too high. By 1974, a mere 600 families had been settled and many of them had abandoned their land and moved on. Thirdly, the government propaganda that free land was available for the peasant and small farmer along the highway created a spontaneous land rush which overwhelmed INCRA's bureaucratic apparatus. The spontaneous migrants occupied plots without prior permission and simply waited therefor INCRA to regularise their situation. Given its terms of reference, the INCRA's attempt to rationalize.

Over 30 percent of the migrants came from Parana, closely followed by Mato Grosso with smaller contingents from Minas Gerais, Espirito santo and Sao Paulo, and the states of Northeast. In the main, they were small farmers who had been forced off their land through high prices. During the 1970s, spurred on by the possibility of land on an INCRA project, this flow moved northwards into Rondonia and by 1980 it had overflowed in Acre.

The pressure on land caused by this migration caused INCRA once again to modify its colonization model to the Directed Settlement Project (PAD). According to INCRA, the division of labour between agencies and the selection of qualified colonist would ensure that settlement was both successful and rapid. However, this was to incorporate a bias against the successful settlement of those most in need of land - the small farmer and peasants.

In the first place, the plots of land offered by INCRA were of varying sizes. First was the two hundred lots of 500 and 1000 hectare which were to be sold by auction. In the main, the purchasers were large landholders in the south who now bought lands in Rondonia with the intention of planting cocao and other cash cultures, such as pepper and plantation rubber. The second was also designated for cash crops, but these 1040 lots were offered only to prospective colonists, who would meet INCRA's selection requirements. The third selection consisted of 4520 lots with an average of 1000 hectare each. These were also destined for subsistence agriculture. They were located on the forest land of directed settlement project. The

selection criteria for colonists were quite different. Here the composition of the family - the age and agricultural experience of each family member - was important. Once registered with the INCRA, the colonist received an authorization to occupy his land.

This is a provisional title that recognizes the right to settle on and work the land but does not confer ownership. The latter stage is not achieved until a period of at least two years have elapsed and only then after INCRA officials have visited the site and evaluated the progress made. If a positive evaluation is received, the INCRA issues a "Definitive title" which confer ownership to the land. Consequently the INCRA directed colonization schemes in Rondonia led to large influx of migrants from other parts of Brazil. This ultimately led to the peopling of large areas of the Amazon region.

INCRA Directed Colonization Projects in Acre:

The ranching front reached Acre in the early 1970s with the arrival of the BR-364. At first, the new comers were small ranchers attracted by cheap land who settled along the edges of the highways. These were followed shortly there after by large companies, attracted by SUDAM's incentives. Both groups bought

land from the generally absentee owners of the rubber estates, which at least in the eastern Acre, through which the highway passed, had been abandoned, some years earlier with the collapse of the credit system following the restriction to incentives from SUDAM and Bank of Amazonia.

However, the land was empty when the ranchers bought it. Many of the rubber estate workers the Seringueiros, had remained behind and continued to tap rubbers on a lesser scale and grew subsistence crops. As they constituted authentic posseiros i.e. provided they had lured and worked on the land for a number of years without intervention from the judicial owner, they had a right of posse (actual occupancy) of the land even though they did not have a little to ti.

The capital of Acre, Rio Branco's population rose from 36095 to 92,304 in 1980 an increase of 155.7 percent in just ten years. The city was hardly able to absorb those waves of labours. In 1982, Rio Branco's industrial labour force consisted of 4900 distributed among 144 firms. There were traditional industries of brickworks, potteries (24%) furniture (16.5%), Sawmill and coffin making (12.9%), and food and drink (30.9%).

The INCRA colonization scheme in acre was created to resolve the crisis in the urban areas and to diffuse the violence in the countryside. Nevertheless, the form that the project took and their mode of operation directly contributed to the continuation of the rural exodus. By mid 1980, only 1436 families had been settled. Secondly, INCRA began to introduce the selection criteria that it had used in Rondonia.

The colonization scheme was followed by a great influx of migrants from outside. In May 1982, fifty two families arrived in Acre from the Shanty town of Sau Paulo. The same process was repeated in the summer of 1983. In August of that year, about 601 families, a total of 3051 persons arrived in Acre to settle on the INCRA projects, of these 311 families migrated from the industrial zone of Betim in the state of Minas Gerais. They came from an area that have been inundated following the construction of the dam at Itaipri.

(c) Exploitation of Resources in Amazonia:

Internal Pressure Underlying the policy: Significant internal pressure came to bear on the new military regime. Urban unrest required police coercion and wage squeeze on workers, characteristic of the post-1964 regime. Since few other concessions were granted to labour by the regime, cheap food policies (especially for beef) were important priorities. The beef industry in the early 1960s, however, was a cylic production low, with price ceilings, making cattle production un-economic for producers, while urban and international demand soared.

The capacity of the traditional landed elites to respond to this crises were perceived as dubious while the technological orientation of agri-business and the entrepreneurial spirits of part of the industrial sector, coupled with the new Australian pasture technologies, seemed a reasonable solution. The apparent viability of this avenue was contingent on the extent to which long term credit could be made available and antiquated production bottlenecks could be circumvented. These credit and production constraints could be addressed without drastic structural change

through increased agricultural lending and horizontal expansion of land use through the sale of state properties to agro-entrepreneurs.

The expansion of cattle production had other attractions since it was consistent with the desire to expand exports of non-traditional Brazilian products, a fundamental feature of the new regimes economic policy. Little was known about Amazonian ecology, but the 300-year history of ranching on the island of Maranjo and the existence of upland natural grass lands made it appear the only technical insufficiency limited the productivity of the livestock in the region. Further, compared with other agricultural options in the region, such as pepper, cacao and rubber plantations, ranching seemed relatively easy to implant and maintain and had low labour requirements. A semi-skilled albour pool (cowboys) for ranching existed and were easily available from GOIS, Matto Grosso and the Northeast. Moreover periodic droughts in the Northeastern portion and generally miserable conditions there assured a supply of unskilled workers who could be recruited by labour contractors (empreitciros) to clear land for pasture. The flexibility of animal marketing and the fact that animal could be walked to market if bridges

collapsed or roads became impassable were also attractive. Finally, the use of corporate entities was viewed favourable because these would have the administrative capability to resolve certain infrastructural problems (e.g. public health, communication food supply) that otherwise would be costly purview of the government. Except for financing and major infrastructural development, the actual involvement and responsibility of the government would be minimal. The larger economic and political concerns of the government, as well as the practical considerations of the actual physical occupation of the region made ranching seem an attractive solution to these problems.

The expansion of ranching into the Amazon was also conditioned by high inflation periods of the 1960s and 1970s that increased land speculation. The fiscal incentives and land concessions provided by the government in Amazonia facilitated land acquisition and contributed to the extreme increase in the value of the land in the Amazon region. Those who invested through SUDAM (Superintendency of Amazonian Development) and other cattle projects could make enormous capital gain simply through the increased Valorization of land.

International Factors underlying/affecting the policy:

International factors implicity or explicitly played an important role in the evolution of ranching as the main development strategy for the Amazon, primarily through the expanded global demand for beef during the mid 1960s. This increased demand reflected both changes in the U.S. production system and rising European and middle Eastern purchases. It has been pointed out that changes in the U.S. beef production system were important in the expanded global beef demand and in the increased lending for the livestock sector by international agencies.

For the 1950s the United States embarked on a programme to increase the production of high quality beef using the feed lot system. Grain fattening of cattle was also a means of disposing of surplus wheat and corn, a serious problem in the late 1950s and early 1960s. Feedlots were capable of generating large tonnages of high quality beef, but the success of this production system was not without some difficulties. In particular, demand began to soar for lower quality, utility beef used in fast foods and sausages.utility or cutter beef, is expensive to produce by the feedlot

system and supplies turned to international sources for beef. The rise in U.S. demand occurred at the same time during which meat consumption and demand increased in Europe and Eastern Bloc and Japan. Since in south American (as opposed to central American) beef has traditionally been oriented to European markets, the expanded purchasing power of these countries in the mid 1960s was a major stimulus to demand.

The general international perspective for the expansion of Brazilian beef is summarized by FAO/ECLA's (1964) study called Livestock in Latin America. The FAO document indicated that although Brazil's existing productive capacity was rather low, it had great potential for expansion through the incorporation of new land and the rationalization of production. The FAO argued that overcoming certain bottlenecks, primarily related to credit, was essential if Brazil were to capture a sizable market share. This document concluded that global beef markets were buoyant and would continue to expand as national and international demand increased, a tendency that was particularly strong in the early 1960s.

Finally, Brazil was seen as an appropriate area for the transference of the Australian pasture technologies. If the condition of long term credit and better grass varieties were met. FAO, pointed out that Brazil could become one of the premier beef exporters. This influential document frequently underlay the great push towards ranching throughout Latin American in the early 1960s, the precise period when policy for the Amazon was being developed. The various international agencies such as the World Bank, were able to argue that with proper technology and better credit lines, livestock represented an excellent investment for the development of Amazon. As a consequence during the mid-to-late 1960s, financial resources poured into livestock sector and associated projects.

For many years, World Bank loans had supported development on a relatively small scale. From 1948-1960, 4 percent and from 1960, 7 percent of all loans went into the livestock sector. Between 1966 and 1970, this percentage jumped to 21 percent. In the years 1959-73 period a total of 63 loans projects were approved involving $ 839.2 million plus $ 1,004 million in counterpart funds. From the period of 1974-80, the Bank planned on 70 loan projects involving some

$ 1.4 billion of which 63 percent was to go to Latin America. Thus the Bank was to lend in seven years more than it had spent during the previous fifteen years on beef production.

The Inter-American Development Bank statistic reveal the same general trends as those of the World Bank. The amount of livestock loans authorized during 1971-76 increased in the aggregate by 120 percent while for agriculture as a whole, they increased by only 38 percent (IADB Annual Reports). The total direct livestock support given by the World Bank and the IADB in the late 1960s and the 1970s, not including general infrastructure loans, was about 1.3 billion dollar. Indirect and counterpart funds provided an additional $ 5 - $ 7 billion. To estimate private foreign and domestic investments in the beef cattle systems is virtually impossible but at least a billion dollars have been invested in the SUDAM Amazon projects alone. By 1983, roughly 75 projects containing livestock components have been financed by the bank. The total cost of these 75 projects alone was $ 7 billion, of which $ 3 billion was for livestock.

The international investment picture coincided very well with Brazil's own development ambitions and devetailed with Brazil's geo-political and balance of

payments concern. It was against the backdrop of these internal and international pressures that after several trips to the Amazon, General Castello Branco, the first military president after the coup, laid the groundwork for far-reaching legislation that was to become known as 'Operation Amazonia'.

Exploitation of Resources in Amazonia: Amazonia, if it were a single country, would be the seventh largest in the world. It contains one third of all forest reserves, one-tenth of all plant and animal species and could, in principle be completely self-sustaining eco-system.[27] Unfortunately, the new discoveries of mineral wealth, such as bauxite, copper, gold, tin, lead, iron, managanese, nickel and silver, and the development of oil, gas and hydro-electric potential are all contributing to change the regional pattern of its economy. It must be added that pressure both from the international economic system and from national politics is building up on Amazonia. The threat is so severe that people now talk of regional desert in the future rather than rainforests.

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27 Elizabeth Allen, "Amazonia Nineteen Ninty: The burning questions", Third World Quarterly, vol. XII, No.1, January 1990, p.230.

For centuries, since the dreams of El-Dorado, the rich natural resources of the area have been the object of exploitation characterised by the cycles of boom and bust development. Side by side the extraction of natural resources has been accompanied by the exploitation of the native population of Amazon and the destruction of its fragile eco-system. Compared to seven million or so Indians in the 16th century, these are now only 500,000 a decimetion wrought by murder, disease, slavery and starvation.

Historically, the extractive economic cycles such as that of rubber - also known as "White gold" have brought migrants into the Amazon area many thousands of those who came were exploited for their labour and thousands died. One of those who survived and managed to tell of his experience was John C. Young Johann, from USA, who lived as rubber tapper in Acre at the turn of this century. The white gold: the diary of a rubber cutter in Amazon, 1906 is his story. As a document it chronicles the physical perils, the natural splendour, the mental and personal isolation and sheer determination involved in making a living from the tropical rainforest in the era. It is fascinating. It is also a reminder of the fact that it was from the deaths of such rubber tappers

and the exploitation of their physical labour that grew the wealth of cosmopolitan Manaus and Belem and the private fortunes of the Amazon rubber barons were amassed.[28]

The struggle of rubber tappers to earn a living from the forest still continues as Chico Mendes has shown. "It is not just something that only existed in the past, it is happening right now".

The exploitation of Amazonia has often gone hand in hand with the deforestation which Chico Mendes opposed. By May 1989, estimated forest clearance in Brazilian Amazonia varied from 5-12 percent. Much of this destruction has been carried out in the last twenty years of military regime from 1964-85. The numerous government programmes centred on the Amazon aimed at bringing it into the national domain, too often with little concern for the social or environmental consequences.[29]

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28 The story of rubber production in Brazil, unlike the tale of Young C Johann, has no happy endings. See the excellent study in environment by Warren Dean, Brazil and the struggle for Rubber, (Cambridge, Cambridge Press, 1987), p.6.

29 Military interest and authority in Amazonia continues. In June 1985, the Calha Norte Control and development of northern border region of Brazil was handed to President. It only came fully to the notice of the press in October 1986. In July 1989, PROFFAO scheme for southern border was introduced.

The programmes have been of dubious economic success. Even now, Amazonia still only account for 3 percent of the national income.

This startling figure come from Dennis Mahar's "Environment Development Policies and Deforestation in Brazil's Amazon Region". Operation Amazonia, the Trans-Amazon Highway system, livestock development, programme of National Integration, Polonoroeste, PoloAmazonia and Carajas, all are government schemes which have contributed to increased deforestation, while displaying indigenous groups and doing little to maintain the environment and the fragile Amazon-ecosystem. On the basis of years of experience in Amazon development projects, Mahar recommends five strategies to improve government policies and slow down deforestation. 1) the elimination of any further fiscal incentives for livestock projects; 2) official agencies should no longer regard deforestation as serious with land improvement; 3) that 50 percent law, whereby a land holder may cut down only trees growing on his land, should be abolished as unenforceable; 4) that taxes should be better administered to provide fund to improve use; and 5) that there should be no more fiscal incentives for any project in the Grande Carajas area.

The problems faced by the Amazon is complex and difficult. The demographic characteristics of the Amazon basin are changing. No longer is the Amazon predominantly a rural area, since 1988, some 53 percent of the population have lived in urban areas, a fact which will have to be borne in mind by planners seeking to maintain the forest and the environment. It is also worth remembering that at the beginning of the 1990s, the Amazon region had a population of 29 million and that both Manaus and Belem had a population of over a million with their own shanty towns around them. In other words the urban problems of major Latin American cities are already features of Amazonia. Smaller cities are also growing at unprecedented rates such as tabatinga, Portovelho and Boa Vista. There is the potential for severe stress on the whole environmental system of Amazon due to the rapidly growing towns and cities.

If government policies, economic sporadic exploitation of commodities and population pressure are all placing the Amazon under stress. What then are the alternatives and prospects for the maintenance of Amazonia? The growing alarm within the Amazon countries themselves about the rate of deforestation and eco-system degradation have convinced many that something must be

done and done in an integrated and sympathetic manner.[30]

If we turn to the native population, it is important to pay attention to the experience of the indigenous groups, whose occupation and survival in Amazonia for thousand of years is clear evidence of their success in managing and adjusting to the environment. Many authorities forsee the ultimate extinction of the great majority of Indian groups, despite their knowledge of jungle pharmacy, of Amazon cultivation of flood plain and forest and of game and animal management. These authors argue, instead that what the Indians require, above all, for their survival are the guaranteed rights to the lands which they occupy.[31] It is clear that any evaluation of the theme has to consider the government policies for development and the physical power of landowners. The range of intervention in forest ecosystem is much greater than has been realized. Much of what was considered, by early explorers, an empty virgin forest has in fact been assidously cultivated and manipulated for centuries by successive generations. The subsequent development plans

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30 International Herald Tribune (Paris), 21 September 1989.

31 Sunday Observer (Bombay), 13 January 1989.

and policies have not only deeply affected the native populations but even threatened the potential of the environment. Lack of understanding of the Amazonian ecosystem and of a realistic planning, for its development have flooded the Amazon with civilization,[32] as envisaged by General Golberry do Cauto a Silva, the geo-politician of the Brazilian Military regime, but instead it has produced a number of social, economic, political and environmental problems in a delicate physical environment.

In Amazon region, the farmer burn both to clear existing land of weeds and to extend farmland into the virgin forests. As migrants have flooded into Amazonia, more and more trees have been felled. According to Brazil's Space Studies Institute, 1,25,000 sq. km. or (48,000 sq. miles) of rainforest were burned in 1989 in ten Amazon state.[33] About a third, corresponding roughly to the area of Denmark. Sattelite pictures taken from August to October 1989 show clearly a 3000 km long belt of fire, which stretched from the state of Maranhao on the Atlantic coast, south through Tocantins

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32 Elizabeth Allen, "Amazonia Nineteen Ninty: The burning questions", Third World Quarterly, vol.XII, No.1, January 1990, p.231.

33 Guardian Weekly(Washington Post Manchester), 14 February 1989.

and Goias and Westwards into Matto Grosso and finally swing north-west into Rondonia. The worst devastation has been in Rondonia state. According to the World Bank figures 23.7 percent of Rondonia had been cleared of forest by 1988 - a high jump from 1980, when 3.1 percent of forest had gone.[34]

Forest fires profoundly disrupt life in the region. Eyewitnesses refer to the fact that during the burning period, one feels suffocated by the admixture of smoke and dust. Cars used their headlights during the tropical days and the local airports were closed. The government has calculated that each year fire destroy timber worth 40 billion dollar - more than a third of Brazil's foreign debt - the largest of any developing nation. It has further calculated that indirect environmental cost could be twenty times, the immediate material costs. That would put the environmental cost of 800 billion dollars a year, twice the foreign debt of Latin America. But according to the World Bank, the Amazon region contributes only 3 percent of the Brazilian economy, which makes it of little importance for foreign debt payment.

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34 Bangkok Post(Bangkok), 14 April 1989.

The destruction of the Amazon eco-system was largely the result of short sighted Brazilian development policies. It resulted also from the rising demand in USA for cheap beef on which the new fast food industry was thriving. Pasture fed cattle from Latin Americas was an economical alternative to grain-fed cattle-beef from north America.

So, Brazil embarked on a policy of tax credits, exemption as well as subsidized loans for private enterpreneurs, interested in investing in cattle ranching.[35] Inevitably these economic trends led to large scale conversion of forest lands into pasture - though the forest was far valuable inherently and perhaps even economically than pasture.

From 1965 to 1983, 469 large cattle ranches averaging 23,000 hectares each year were established in the Amazon region. 1/4 of this land was cleared by 1983. The result through 1983 was a $ 2.5 billion government investment in a sector which was going to be responsible for deforestation and land degradation.

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35 Telegraph(Calcutta), 5 July 1989.

C H A P T E R III

The development which was taking place in Brazil was being repeated in other rainforests elsewhere. Every year about 11 million acres of tropical forests and woodlands are being destroyed around the world,[36] mostly to clear the land for agriculture, to feed the growing population, or supply exchange earnings through exports. According to one estimate, at the present rates, by the year 2017 several countries will have destroyed all their forests. Consequence of such sympathetic destruction of rainforest are ozone depletion, acid-rain, desertification, diminishing resource, global climatic change and other impending crises.

The predicament in which Brazil finds itself today illustrate clearly, the major issues related with the protection of environment any where in the world.

The tropical forest conservation presents an unprecedented environmental problems in which it is meangingless to discuss any technology or approach without also considering the ecological, soccial, and economic context in which it is applied. There are multiplicity of environmental and social factors involved in any attempt to save the rainforest.

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36 Bangkok Post(Bangkok), 22 February 1989.

AMAZONIAN CO-OPERATION TREATY AND ITS IMPLICATION:

The Amazonian region, with its vastness has excited man's imagination and power's greed as well. Since the beginning of the framing of the political configuration of South America the Amazonian region has been the object of outside ambition. The idea of its internationalization is not new, nor has it disappeared and it asks for bold efforts of the Brazilian government to conserve it under its sovereignty.

An event in such a context must be referred to. In the middle of the 19th century, the Amazon steam Navigation Company was created, incorporated by the Le Roy, Bayard Co. The legal implication was the thesis of the free international navigation of great rivers, that is to say it would be recognised as a patrimony of all. Much later in 1978, within the Treaty for Amazonian Cooperation, the contracting parties reacted sharply against the internationalization thesis. Arthur Reis, a renowned historian and scholar in the area mentions, in such a context, the following:

> The allegation grew (in the nineteenth century) that Brazil was committing a crime against humanity, the term given to describe the Brazilian attitude, closing the door to ships which came bringing civilization.

A wide spread world campaign arose concerning this issue, involving several entities. Mathew Fontaine Maury, one of the leaders for the thesis of internationalization of rivers stated in his book, The Amazon River and Atlantic Slopes of South America, published in 1985, that the Amazonian region could not be a closed domain of any nation, as it was waiting for strong and vigorous races, for the enterprise of its scientific and economic conquest.

In a document of the Brazilian Embassy in Washington dated 15 November 1850, it is declared that:

> The pretention of exploring the Amazon River its bank and tributaries, on their own and with their own engineers and naturalists, involves the pretention of obtaining free navigation as a necessary consequence.

At the beginning of this century, the stress was that the Amazonian region should be opened to chartered companies, the instrument used in Africa and responsible for the colonization of that continent.

A Brazilian document, an official letter dated 1902, by Barao do Rio Branco, the Minister of Foreign Affairs, refers to a declaration of an European diplomat Oswold Richtofen that "it would not be good if Brazil deprive the world of the natural riches of the Amazonian

region. Yet another document, from the Secretary of State John Hay said, "I see no danger to the sovereignty of American nation in the fact that industrial companies establish themselves for the development of lands which lies uncultivated".

After the war, there arose another movement, this time the Amazonian region receiving surplus populations of Asia.

A recent document, emanating from a powerful group with extensive international ramifications affirms that:

> The entire Amazonian Region, the greater part of which is in Brazil, but also partially within the territories of Venezuela, Columbia and Peru, is considered by U.S. as a patrimony of Humanity. The possession of this immense area by the aforementioned countries is merely circumstantial.
>
> It is our duty to guarantee the preservation of the Amazon Region and of its aboriginal inhabitants for its use by the great European civilizations whose natural areas are reduced to critical limits.

The issue which arises refers to patrimony of humanity adding new concepts of environmental nature - "preservation of the Amazon Region and the protection of the region's "aboriginal inhabitants". The developed nations accuse the Brazilians of being incapable of

administering their own territories. But the Brazilian claim that the Amazonian Region have been preserved so far only because of their resistance to global pressure for opening it for all. Brazilian government under external pressure would avoid all those development that take place at the cost of nature. They have also committed themselves towards rational oriented actions.

While avoiding falling into the grave errors that have led to the destructive exploitation of natural resources in other regions of the planet, it remains for Amazonian countries, to seek out ways and means that permit rational utilization of the riches of the Amazonian region. There is no doubt that the co-operation of the Amazonian countries will play a relevant role in the development of the region and an effort in such a way was the Treaty for Amazonian co-operation. The Treaty would help to explore fruitful avenues of intra-regional cooperation for sustainable development in the Amazonian Region.

A special commission on environment within the context of the Treaty of Amazonian Co-operation was formed to carry on a dialogue regarding the Amazonian region environmental complex and substantially increase

regional co-operation in this sensitive and promising area. The objective of the Treaty is that the future of the region will be determined by the Amazonian countries, through strengthening of co-operation among them.

It is upto the holders of the Amazonian patrimony, to demonstrate how capable they are in matters of conservation and rational use of the environment. The member countries strongly reject any type of pressure or coercion.

(1) The Background to the Treaty for Amazonian Cooperation:

The geo-political perspective of the Brazilian relations with the northern countries of South America rests on policies of the physical occupation of the Amazon basin and exploiting its resources. The moving of the capital of Brazil to the inland and the massive road-building projects to penetrate the Amazonian "heartland" are aspects of this geopolitical picture.

To a greater or lesser degree, all of the Amazon basin countries--Bolivia, Brazil, Columbia, Ecuador, Guyana, Surinam and Venezuela--share this interest in penetrating the Amazon heartland and there is a definite

sense of geopolitical competition involved in this interest.[1]

An important theme in Brazilian geopolitical writings, that have both national and international implications, is the problem of filling the "empty spaces of Brazil". This is closely related with the question of the Amazon Basin and represents in a very concrete sense an application of Mackinder's heartland theory. Brazilian emphasis on the Amazon and on such international instruments as Amazon Pact reflect the concern that Brazil must fully and effectively occupy all its territories and that it is a dominant power in the vast empty spaces of the Southern American heartland. In this context, the technology of transportation, and specifically of road building, is fundamental to the plans of Brazilian geopoliticians to the point of creating concern in the neighbouring countries over the predominant Brazilian role in the heartland.[2]

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1 Lewis A Tambs, "Geopolitical factors in Latin America," in Latin America: Politics, Economics and Hemisphere Security, ed., Norman A Bailey (New York: Praeger, 1965), p.36.

2 Jack Child, Geopolitics and Conflict in South America: Quarrels Among Neighbours (New York: Praeger, 1985), p.36.

The name of General Carlos de Meira Mattos has, in recent years, synthesized and popularized much of the work of his predecessor, General Golberry de Cousto e Silva, and has succeeded in articulating ideas in a number of Brazilian geopolitical goals. His contribution has focussed on the need for a rational and steady development of Brazil towards its full realization of its destiny as a political and economic power. This includes the need for Brazil to integrate its own heartland, play its rightful role in defending the American continent, take advantage of the strategic importance of its north-eastern occuapnce, co-operate with (but not be dominated) by United States and be a factor in the security of the South Atlantic and West Africa.[3] Meira Matto's, having in mind the realization of such objectives, has paid special attention to the economic possibilities inherent in the development of the Amazon basin and in the beneficial effect of Co-operative relations between the Amazon and River Plate Basins.[4]

The search for Brazil's greatness, and what it is perceived on its rightful role in the world was the

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3 ibid, p.41.

4 Carlos de Meira Mattos, Brasil: Geopolitica e Destino (Rio de Janeiro: Biblioteca do Exercito, 1975), p.58.

most important theme in the Brazilian geo-political writing. Interestingly, thoughts along these lines are not usually expressed aggressively or shrilly by Brazilian geopolitical writers, rather it is almost taken for granted that it will happen and that all objective observation should be in agreement that this is a natural and inevitable occurrence or development to take place in the future.

An important aspect of this search for greatness is Brazil's relationship with United States. Brazilian geo-politicians and writers from the 1940s through the 1960s were quite frank in acknowledging that part of this path was to be traversed as a junior partner of the United States. According to so-called barganha deal the United States would help Brazil being its principle ally in Latin America. The Argentine response to this "deal" was to accuse the Brazilians of being Lackeys of the United States and to declare that Argentina would never accept such a subordination. This subserviant position of Brazil faded away during the Carter Presidency, when a combination of factors (greater Brazilian maturity and self-reliance, Carter's ineptness in dealing with human rights problem in Brazil) came together to force a quick change in what had once been an unusually close relationship and one

that greatly enhanced Brazil's development for a period of some 35 years. From the late 1960s and early 1970s Brazil broke out of its geopolitical dependence on the United States.[5]

Another aspect of all importance is the idea of internal security and development. They are fundamental to an understanding of how Brazilian geo-politicians believe the country can cover the ground towards greatness. One should recall the words in the centre of the Brazilian flag: ordem e progresso (order and progress) placed there by the nineteenth century Brazilian military positivists. The descendants of these men have largely transformed the original word into their contemporary slogan of Segurança e desenvolvimento (security and development).

These two concepts are interlinked and can be summed up as follows: there can be no meaningful progress towards Brazil's destiny of greatness unless there is order and discipline as defined by the Brazilian civil-military elites who have ruled since 1964). At the same

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5 Ruber de Hoyos, The United States and Latin America: Geopolitic and Political Development, paper delivered at the Congress of International Political Science Association (Rio de Janeiro, August 1982), pp.15-16.

time order and peace are enhanced by national development. For a large part of the Brazilian geopoliticians, the concept of order is clearly linked with internal policies of control of subversive movements and keeping a watchful eye on individual or groups who might be tempted to come forth with their own definition of Brazilian greatness. Both these trends were characteristic of the bureaucratic authoritarian rule of the military regime (1964-85). Under this, it must also be understood in its international connotation, the factors that were responsible during the military regime, for a diplomacy which took step to enhance the stability of some of Brazilian neighbours. As President Joao Figueirldo put it in April of 1983:

> Where Brazil has common borders with countries whose politico-social development can represent a danger to national security, the Brazilian Government will do everything possible to prevent the region from falling under the influence of foreign powers, especially the Soviet Union. Regarding countries with which Brazil has no common borders Brazil is not involved with the problem, although the problem may be of great interest to other nations of the continent.(6)

All these geo-political themes of Brazilian diplomacy in the 1970s were neatly translated in the

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6 Jack Child, Geopolitics and Conflict in South America: Quarrels Among Neighbour (New York, Praeger, 1985), p.36.

conscious effort to develop the Amazon basin collectively and such a philosophy responsible for the signing of the Amazon Pact.

(II) General Introduction to the Treaty for Amazonian Co-operation:

The Republic of Bolivia, Brazil, Colombia, Ecuador, Guyana, Peru, Surinam and Venezuela signed the Treaty for Amazonian Co-operation on 3 July 1978 moved by the following principles:

(1) Each one of the parties see their respective Amazonian regions as an integral part of their respective territories;

(2) The pooling of efforts, both within their respective frontiers as well as among themselves aim at promoting harmonious development of the Amazon region;

(3) The benefits of said development would be shared among the contracting parties so as to raise the standard of living of their peoples and to achieve the total incorporation of their Amazonian territories into their respective national economies;

(4) The Amazonian countries, when signed the agreement, were conscious of the usefulness of sharing national experiences in matters related to the promotion of regional development and to bring about a balance

between economic growth and conservation of the environment. Both aspects - the socio-economic development and the conservation of the environment - are seen by the contracting parties as responsibilities inherent in the sovereignty of each state;

(5) The co-operation among the parties is directed towards the fulfilment of the above responsibilities, the expansion of joint efforts for the ecological conservation of the Amazon region, and in a broad political context it will contribute to the advancement towards the socio-economic integration and political solidarity of all Latin America. The Treaty consequently represents the beginning of a process of cooperation which would benefit the respective parties and the Amazon region as a whole.

Accordingly the Treaty for Amazonian Cooperation aims at joint actions and efforts to promote the harmonious development of the parties representing Amazonian territories with the purpose of producing equitable and mutually beneficial results, respecting the preservation of the environment, and allowing a rational utilization of the natural resources of those territories.

The treaty was enforced in the territories of the contracting parties in the Amazonian basin as well as in any other region of a contracting party which by virtue of its geo-political, ecological or economic characteristic is considered closely connected with the Basin.

From a legal perspective the member countries were assured of the exclusive use and utilization of natural resources within their territories, a right inherent in the exercise of sovereignty by each state and that this right should not be subject to any restriction other than arising from International Law.

In the context of communications, the agreement has taken account of the importance and the multiplicity of function played by the Amazonian rivers in the process of the economic and social development of the region. Thus the obligation imposed on countries to make efforts at achieving rational utilization of the hydro-resources and to comply with the free navigation of the rivers of the Amazon region in order that they become an effective communication link among the contracting parties and with the Atlantic Ocean.

With reference to the flora and fauna of the Amazon region, the treaty defends the thesis that their exploitation must be planned so as to maintain the ecological balance within the region and preserve its rich biodiversity. For this, it was collectively decided to promote scientific research and to exchange information and technical personnel among the competent national agencies so as to increase their knowledge of the Amazonian flora and fauna and side by side to prevent and control diseases in the region. Having in mind both situations the parties also proposed a system for the proper exchange of information on measures adopted or to be adopted by each state in its Amazonian territories. The conservationist measures have become the subject of an annual report to be presented by each country.

In what concern the Amazonian region present health services and the improvement of the sanitary conditions the treaty has taken measures for preventing and combating epidemics and to establish close cooperation in the fields of scientific and technological research, for the purpose of improving health services and sanitary conditions in order to accelerate the improvement of regional life conditions which was

seen as an important aspect of the socio-economic development of the region.

An interesting aspect of the integration of the Amazonian Reform with other national areas are the laying down of physical infrastructure in relation to transportation and communications. Therefore, the treaty forsee the study of most harmonious ways to establish or to improve road, river, air and telecommunication links bearing in mind the plan and programmes of each country to attain the goals of fully incorporating their respective Amazonian territories into the national economies and to increase the rational utilisation of the human and natural resources of their respective Amazonian territories. Two other aspects of the Pact of 1978 are the measures related with the promotion of retail trade of products for local consumption among the respective Amazonian border population through bilateral or multilateral agreements, and the division regarding cooperation to increase the flow of tourists, both national and from other countries in their respective Amazonian territories, keeping in mind national regulations for the protection of indigenous cultures and natural resources, and the dispositions of agreement regarding the conservation of the ethnological and archeological wealth of the Amazon region.

The Conclusive part of the treaty focuses on:

(i) The maintenance of exchange of information and cooperation among the Amazonian countries and with the agencies for Latin American cooperation in matters covered by the Treaty;

(ii) the elaboration of programme of common interest by the contracting parties to develop their Amazonian territories;

(iii) the general consensus arrived upon that nothing contained in the treaty shall in any way limit the rights of the parties to conclude bilateral or multilateral agreements on specific or general matters, provided that these are not contrary to the achievement of the common aims for cooperation in the Amazonian region;

(iv) neither the treaty nor its execution have any effect on any international treaties in force between the parties nor on any differences that exist with regard to limits or territorial right between the parties. Consequently the treaty does not imply acceptance or renunciation, affirmation or modification of the position or interpretation that each contracting parties may hold on these matters;

(v) the treaty also laid down the establishment of a more frequent meetings of the Ministers of Foreign Affairs of the Amazonian countries to commence meeting,

when deemed appropriate, in order to establish the basic guidelines for common policies or for assessing and evaluating the general development, or the process of Amazonian co-operation and for taking decisions designed to carry out the aims set out in the document.

The treaty has forseen an operative body the Amazonian Cooperation Council which meets once a year to ensure that the aims and objectives of the agreement are complied with and to carry out the decision taken at meetings of Foreign Affairs Minister and lastly to take under consideration initiatives and plans presented by the parties as well as to adopt decision for undertaking bilateral or multilateral studies and plans; and

(vi) finally, the contracting parties can set up special commissions to study specific problems related to the aims of the Treaty.

III. The Implications of the Amazonian Cooperation Treaty:

The Presidents of the member-countries of the Amazonian Cooperation Treaty, met twice since the conclusion of the agreement. The first time in Manaus on 6 May 1989 and a second time also in Manaus, on February 10 and 11, 1992. In the meeting of 1989 the central point was the evaluation of the development and protection of the rich heritage of their respective Amazon

territories "according to the Declaration" issued on that occasion.

The Central theme of "the Amazon Declaration" was protecting the cultural, economic and ecological heritage of the Amazon region, and the use of their potential to promote economic and social development of the people, keeping in mind the rational use of the resources of the region, in order that the future generations may benefit from this legacy of nature.

In such a context broad support given to the Environment and Indigenous Affairs, special Commission, was created after the conclusion of the treaty of 1978 which aimed at fostering development and respective Amazonian population. The Presidents in the meeting stressed their countries full respect for the rights of indigenous populations of the Amazonian region in the context of the maintenance and preservation of the integrity of the local human groups, their culture and their ecological habitats.

This broad approach was conditioned by the sovereign right of each country to freely manage its natural resources bearing in mind the need for promoting the economic and social development of its people and adequate conservation of the environment.

In the Manaus meeting of 1989 the foreign debt problem and the position taken by the developed countries in relation to the conservation of the environment and their implications for the preservation of the Amazonian heritage were discussed.

So it was the contracting parties which strongly denounced the grave implications for the conservation, exploitation and rational utilization of the natural heritage. The situation created by the foreign debt and its service which have transformed the Third World as importers of capital from the creditor countries at the cost of intolerable sacrifice made by the people. The reactivation of the process of economic growth and development in the countries of the Amazonian region was seen as an all important factor for the preservation of the area's eco-systems.

In the context of the concern expressed in the developed countries in relation to the conservation of the Amazon environment, the Declaration of 1989 stressed the need that the concern be translated into measures of cooperation in the financial and technological fields, through the establishment of new resource flow and concessional terms to projects oriented to environment protection in the Amazon. Having in mind the preservation

of the Amazonian heritage, the Manaus Declaration of 1989 has dispositions regarding the global risks for human life and environmental quality represented by the existence of nuclear weapons and other weapons of mass destruction. Consequently it stressed the commitment by the member countries of the treaty of 1978 to use nuclear energy exclusively for peaceful purposes and have urged the countries that possess nuclear weapons to cease the testing of such weapon and to promote the progressive elimination of their arsenals.

The meeting of the Manaus of 1992 will be examined in Chapter IV of this dissertation.

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CHAPTER IV

THE BRAZILIAN APPROACH TO THE OPENING OF THE AMAZON REGION IN THE CONTEXT OF THE UNITED NATIONS CONFERENCE ON ENVIRONMENT AND DEVELOPMENT TO BE HELD IN RIO de JANEIRO 1992

The awareness throughout the world about global warning - in the period of the preparation of the UNCED 1992 - has prompted many countries to blame Brazil for contributing to build up of carbondioxide in the atmosphere through the method of clearing the forest and resorting to burning it. Since the sixties and seventies huge tracts of forest have been felled in Brazil as part of its colonisation policy. Faced with the sudden spectre of the "green house effect", Western countries turned against Brazil, condemning it as the world's biggest "Economic Criminal".

The international concern was amplified when Chieo Mendes, the leader of the rubber tapper union, who opposed the colonisation programmes and was murdered by the Pistoleiros hired by the land owners. He was hailed in the USA and West European countries, by the environmentalists as a grass-root ecologist, who paid the heaviest price for opposing vested interests.

The Brazilian government reacted sharply to such criticism, arguing that the Western countries

could hardly blame Brazil as they have themselves created the problem. While the bruning of fossils fuels contribute nearly 60 percent of the gases responsible for the green house effect deforestation and landuse changes account for only 9 percent. Industrialized countries, Brazil argued should set their own house in order before preaching to the rest of the world.

Moreover the government questioned the basis on which Western experts have calculated the extent of deforestation. While the World Bank estimated that 12 percent of Brazil's Amazon forest had been destroyed, so far, the official sources, based on satellite surgeys put it at 5 percent. Even if one accepts the latter figure it still means 250000 sq. km. of Amazon forest, which is undoubtedly a gigantic area. This can upset Brazil's hydrological balance and landuse pattern, not to mention the impairment of globes 'lung' in recycling of carbondioxide.

Paradoxical though it may seem, international concern about Brazil's contribution to global warning, in the ultimate analysis will effect Brazil immediately and the rest of the world ultimately. In this sense the future of Brazil's development is closely associated with the preservation of the fragile Amazonian ecosystem.

It must also be considered that if Brazil wants the world's sympathy on matters of debt and economic help for development, it can not ignorethe international views on the Brazilian government policy regarding environment. The world places the fulfilment of the environmental conditions on its lending policy. Besides Brazil has been an object of criticism by the highly influential pressure groups who insist on respect for the common planetary heritage.

Little had come from President Jose Sarney's (1985-90) public peldge to halt the burning by the cattle ranchers of heavily forested western Amazon. The State of Rondonia with one of the world's richest ecosystem is now 17 percent deforested. With the inauguration of President Fernando Collar de Mello's administration in 1990, strong efforts have been taken to coordinate the "economic and social" development of the Amazonia with environmental conservation and protection.

I. General Approach to the Situation Previous to 1990:

The Amazon which is the world's largest rainforests play among other ecological function, a crucial role of fixing the carbondioxide and generating oxygen. Thus it counters the ill-effects of industrial pollutants responsible for thinning the atmosphere. In the

delicate framework of the planets ecosystem, the Amazon forms one of the pillars of man's existence. That sounds less melodramatic, if it is kept in mind that the burning of forests is responsible for the destruction of resources that helps support life on this planet. It is enough to keep in mind that carbondioxide (CO_2) have increased in recent years from about 1.5 billion tons annually to more than 5 billion tons. In the first half of the 21st century carbondioxide concentration in the air will be about double that of the pre-industrial period, which will have a direct effect on the earth's temperature due to the green house effect.

Only in 1989, thanks to the international pressure as well as the demands at home, the Brazilian government has awaken to the need to protect the Amazonian ecosystem. It has set up an open body called Institute for Environment and Renewable Natural Resources. Tax incentives for cattle ranching have been suspended. A policy titled "Our Nature" has been drawn up with the support of broad socio-economic groups. The Brazilian environmentalist sees the new national government's attitude as a shift from olive (the colour of Brazil's military uniform) being largely responsible for developmental policies which compromised the ecology to green, representing the environmentalists.

Only in the late 1980s it has been accepted by the Brazilian authorities that the primary function of forest is to maintain ecological stability, which is possible without sacrificing equity and social justice The first step was made then to integrate environmental concerns with agricultural and rural development. For a period of time environmental benefits accruing from the preservation of forests has been underplayed both by the planners as well as by the general public. A new mentality started emerging supporting the principle that was sustainable development will need to be environmentally, nondegrading as a condition for being technically viable and socially acceptable.

II. The Manaus Declaration of 1992:

On 10th and 11th February 1992, the Presidents of the Amazonian States, met in Manaus, the capital of Amazon. This was the second time since the conclusion of the Amazonian Cooperation Treaty in 1978, that they met and examined together the issues related with the Amazonian region. This time the issues considered were those to figure in the agenda of the UNCED - United Nations Conference on Environment and Development - to take place in Rio de Janeiro in June 1992.

The core of the Manaus Declaration of 1992 was that the solution of environmental problems confronting humanity today, is "intimately connected to a new attitude towards international cooperation" in terms of transfer of financial resources and access to technologies. Both these observations were placed against the background of the need to expand commercial flows and measures to solve the problem of foreign debt.

The central point of the debate that have taken place was that the progressive deterioration of the environment asks for conscious and determined efforts by the developed and underdeveloped countries. The Declaration recognises that if underdevelopment is the cause of environmental deterioration, it is also largely motivated by the international market forces. Thus the Declaration rejects the principle that to avert the deterioration of the environment, the underdeveloped countriest must accept "ecological controls and conditionalities" dictated by the developed countries.

The joint position of the Amazonian countries for the UNCED - United Nations Conference on Environment and Development is reflected in the following points:

(a) Climatic Change: The present trends of global climate change, with their implications on the environment and economy of the Amazonia, resulting from the cumulative concentration of green house gases is largely a responsibility of the economically developed countries. Consequently it is their responsibility to adopt concrete measures to secure the said trend. The Amazonian countries will support a convention on climate change that is based on the transfer of financial and technological resources that would lead to a new global development model.

(b) Biological Diversity and Biotechnology: The chief point stressed is that the biological resources are natural resources of each country, which enjoy broad "national sovereignty over them". Nevertheless national and international cooperation on the basis of governmental agreements, are required for the conservation and sustainable use of biological diversity. A very pertinent point in this context of the Amerindian populations of the Amazonia was the proposal put forward that indigenous populations, their traditional methods and knowledge must be enhanced and protected to ensure these population, the benefit of economic and social development. In the context of the Amazonian ecosystem it was considered necessary to conclude a convention on biological diversity in order to assure the access to the resources of biological diversity and in a second phase the access to the biotechnology originating from it.

(c) Forests: Once again the principle of sovereignty was stressed, "they are part of the territories within the State jurisdiction and should not be seen as the global property. An important point raised was that forests were not only an environmentally important resource but were no less important from economic, cultural and social point of view, consequently any consideration about the forests has to take into account their mineral reserves, energy resources, human occupation, man's productive activities besides tourist potentials. Consequently the national effort aimed at a sustainable development and use of the forests in the interest of national populations, nature or settlers must not be opposed by the international community. Therefore any economic activity in the forest ecosystem, aiming at any short or long term projects of development must be environmentally compatible with the conservation and protection of the environment and the forest natural resources.

(d) Soil Degradation: Under this sub-title, the meeting of 1992 has examined a series of problems which have been identified by the developed countries as typifying the negative aspects of the opening of the Amazonian region: soil erosion, desertification, inadequate resort to production processes and technologies, besides the

disorganised land occupation. These problems have been examined from a double aspect: their serious impact on the environment and their damage to the development of consistent agricultural production and river basin conservation. Experience has taught that in promoting the occupation of the Amazonian region attention must be paid to scientific and technological norms, thus the need of close observation, of preventive and corrective measures.

(e) Wastes and Toxic Wastes: The pollution of the Amazonian rivers largely due to the gold mining, an object of frequent criticism by ecological pressure groups, was examined from a double aspect. First, the need of measures taken at national and regional levels for the integrated management of river basins for the use as suppliers of drinking water and other sources of activities related with irrigation, fishing, production. Secondly, the meeting of 1992 established the norm that toxic waste should be disposed of or eliminated at its production site and going a step further, it has recommended the urgent necessity of negotiation of a protocol between the Amazonian government, establishing appropriate procedures regarding liability and indeminisation of damages resulting from transboundary movement of hazardous wastes and its management.

(f) Indigenous and Local Population and Communities: The aim of the recommendations regarding this subtitle was the improvement of the quality of such populations through the promotion of measures of sustainable development of their traditional knowledge and practices. Consequently the need for their self-development, the guarantee of their habitat and the strengthening of national institutional mechanisms to preserve their cultural identity. These measures must be supported by international financial and technical cooperation, within the spirit of the International Year of Indigenous People to be celebrated in 1998.

(g) Financial Resources and Transfer of Technology: Both points have been examined within the context that integrating environment and development results, benefits common to developed and developing countries. They are partners in a same cause that asks for a new international co-operation spirit. In this common effort it must be kept in mind that while the developing societies have limited financial means and capabilities, on the other hand, the industrially advanced nations have a historical responsibility for the presently unsustainable situation of the environment on a global scale and also the resources to finance a sustainable

process, aiming at assuring environment preservation and development expansion. The unequal financial means and capabilities places a greater responsibility on the industrialized countries to protect the environment and promote development. The implication of these ideas is that the transfer of technology and provision of financial assistance to ensure environmentally appropriate development should be on a preferential rather than on a purely commercial basis.

III. Tropical Rainforest and the controvercies on its Preservation before the opening of UNCED at Rio:

Grim statistics confirm deforestation's links to global warming. But nations fail to find a common ground on how to save prime forests from the axe. Till the mid eighties, developed countries talked of conserving forest for abstract reasons such as "preserving nature's library" or "saving the last great tropical canopy". But as the countdown for the Rio Summit began, the rich countries suddenly realised that moving down forests was more a global problem than an asoteric one. Studies by the New York based World Resources Institute indicated that deforestation now accounted for a third of the carbondioxide being released into the atmosphere making it the single largest

contribution to the global warming phenomenon.[1] Moreover, forests acted as "global sinks" for atmospheric carbondioxide and any loss of forest cover would push levels of the gas even higher. Developed nations began pressing for a convention that would declare forests as "a global commons" and regulate its exploitation.

They were also concerned about the resultant massive genetic erosion that was occurring. The Harvard biologist E.O. Wilson calls it "the death of birth".[2] Most of the 17,000 million hectares of the tropical forest, rich in biodiversity are located in developing countries. While such forests covered barely 7 percent of the land surface, they harbour half the species of the world's flora and fauna. The instance in a 15 hectare patch of rainforest in Brunei, 700 odd species of trees have been identified as many as in all of North America. Much of the world's agricultural and pharmacentical needs - from developing hybrid seeds to harbal cures - came from such prime forests. Wilson estimates that the chopping down of tropical forests leads to at least 50,000 invertibrate species every year - and about 140 everyday - facing extinction.[3] The developed countries

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1 India Today, 19 June 1992, p.82.

2 ibid, p.89.

3 German News, Saving the Tropical forests; case study of Brazilian Rainforest, June 1992.

solution suggests a separate convention in order to preserve the bio-diversity.

Both these proposed conventions were viewed with deep suspicion by the developing nations. At the Earth Summit to be held in Rio-de Janeiro, any treaty to prevent the use of forests would deny them a major source of income. Apart from that, wood is a prime source of energy especially for cooking in such countries. In 1990, it accounted for 17 percent of their total energy consumption. In Kaulalumpur, Mohathir Mohammad, the Malayian Prime Minister said: "We do not cut down our trees follishly. We need space for agriculture, we need living space and we need money from our timber".[4] With timber sales contributing to a major share of Malaysia's income from exports, Mohammad was particularly rattled by the recent boycott of its timber by many European and North American countries.

Most developing countries view the global forestry convention as an infringement of their national sovereignty. And even if they agree to some conservation they would like the rich nations to compensate them for the loss of revenue. India too is particularly firm against such a convention with Environment Minister

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4 Time (London), 22 June 1992.

asserting: "How we deal with over forest is our business. This so called globalising sinks idea stinks".

As the date for the Summit neared, no compromise seemed in sight. Developing countries are only willing to go as far as signing a statement of principles but not any legally binding document. The United States, on the other hand, while waffling over the climate convention, took an unusually tought stand on the forestry convention. Robert Ryan, director of the U.S. team for the Summit, said, "Forests are too important an issue to leave to a set of principles. Without a legally binding convention there would be no strong commitment.

The leverage point became finance. Several developed countries promised India and Brazil, which have some of the richest tropical forest biome, massive funds for afforestation. Politically it was a highly tempting offer as employment generation from such schemes is high. But the sides still suspicious of each other, no agreement was reached and it was left for the leaders to sort it out at the Summit.

The bio-diversity convention which ended at Nairobi, however, met with partial success. Developing countries were willing to earmark part of their forests

for intense conservation but insisted on two clauses: one, developed countries pay for the resultant loss of revenue; and two, the developing nations would have free access to substances developed by companies who used the preserved forests for research.

Though a broad consensus had been reached, countries had yet to work out what was the best way to preserve these biosphere reserves. In the past no amount of legislation has helped.

While the West is keen on establishing "giant preserves", developing nations do not think it as ideal solution for conservation. Yet overemphasis by the West on tackling problems of global dimensions only sparked off concern in most poor nations. The fear is that while programmes like biodiversity preservation would receive funding, no aid would be forth coming to meet the country's regular development programmes. Apart from degraded forests, desertification and dropping agricultural productivity are other major problems.

Summing up the developing nations mood, Fan Sri Razali Ismail the Chief negotiator at UNCED said: "We have to be careful of half-baked nations about forests being global commons".[5] Developed countries are robbing the poor to save the rich".

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5 India Today, 15 June 1992.

IV. Some of the Issues that will possibly divide North and South at Rio:

1. Greenhouse Gas Emission: The developed countries of the North want a 20 percent cut in green house gas emissions like carbondioxide and methane by 2005. They also want a major shift from use of coal and wood for energy. In contrast to this the South, representing the developing nations, blame the rich for excessive emissions over last 50 years and want them to reduce it, opposed to any cut in its own emission as it would hinder their economic development.

2. Forests: The North wants a legally binding convention that severely restricts the felling of forests especially in the tropical countries which are rich in biodiversity. As a response to this the South takes a stand that such moves would impinge on national sovereignty. The rich must compensate for conservation and share profits if species are used for research.

3. Population: The developed countries cite population explosion and poverty as the major reasons for deforestation and water pollution and other environmental hazards confronting humanity today. They want steps to be taken for the control of population. On the other hand the developing and less developed nations blame the rich for

overconsumption. They say that the developed world is responsible for consuming 60 percent of the world's energy resources.

4. Technology Transfer: The developed countries believe that technology development is commercial and those countries that want to utilise it must pay for it. Reacting to this sharply, the developing nations want technology, used for clearning up pollutants and for improving energy efficiency, to be transferred on concessional rates.

5. Finance: The northern developed countries want that the financing mechanism for cleaning the environment should not be made mandatory on the advanced countries. According to them the existing UN mechanisms such as the Global Environment Facility or the World Bank should distribute the aid. In retaliation to this stand of the North, the developing countries want firm commitments on aid for environmental issues. They insist on creation of a new institution whose functioning would reflect more accurately the ecological problems.

6. Degradation: Last but not the least, the industrially advanced nations admits that industrialisation process

had caused much of the environmental degradation today, but they don not want to pay for polluting the earth in the past. They also do not want it raked up. In opposition to this the third world countries representing developing and less developed nations strongly believe that the North is responsible for all the muck in the past. And, therefore, they should pay for the entire cleaning up process on environmental and moral grounds.

CHAPTER V

CONCLUSION

Under the adverse conditions, structures of collective action and resistance, in the Amazon region, multiplied. These took the form of rural workers' unions, church-based communities and other associations, committees and councils. A burgeoning number of community level initiatives were supported by a variety of intermediary organisation, both structured and adhoc. In the first phase of this process of organisation were limited to the tasks of resistance to eviction and the denunciation of injustice and human right abuse.

The opening up of wider possibilities involving different forms of resistance was intimately linked to political conditions in the country as a whole. The controlled liberalisation process started by General Geisel, in the 1970s, began taking shapes under his successor General Figueiredo. Political party formation was permitted and trade union federations emerged despite the prevailing labour legislation.

At a grassroots level in the Amazon region, autonomous community initiatives more often than not had support from local development groups and funding from aid agencies. In this conflict-ridden and polarised political context notions of 'neutral grassroots

development in tiatives were irrelevant. Health, education, literacy, production and any other type of "project" was conceived of as instrument of popular education, enabling communities to analyse their problem and to conceive of and organise their solution. In the event, some indigenous communities did acquire control over their own affairs in place of official tutelage. This involved projects, such as the spatial reorganisation of the community, but not recognised as such or effectively protected by the State or seed money for co-operatives to break the chain of exploitation by local merchants, or literacy training in either Portuguese, the indigenous language or both.

These initiatives continued through out the early 1980s to be strategies of resistance and involved little notion of 'sustainable development' or specific preoccupation with the natural resource base. However, the period from 1985-1989 saw a remarkable convergence of three previously unconnected strands that together, called into question and slowed down if not halted, prevailing official development assumptions and practice.

The three strands were: increasing (though always fragile and dispersed) grassroots organisation in the Amazon region, environmental lobbying groups in Northern hemisphere (especially in U.S.A.) concerned with the

advocacy of sustainable development practices and increasingly turning their attention to the perceived environmentally damaging effects of much official development aid, and thirdly the expectations for effective democracy, including increased legitimacy for grassroots and non-governmental groups within the political system, created by the advent of a civilian administration.

North American environmental groups had begun questioning World Bank lending policy in the early 1980s. Lobbying press, Bank staff and key members of the U.S. Congress successfully criticised bank performance on the environmental and social impact of its loans. Much attention was directed to three particularly problematic project loans, one of these being the Polonoroeste project in Brazil.[1] Pressure on the Bank from the foreign operations committees of the House and Senate Appropriations Committees was such that in 1985 the Bank suspended further disbursements of the loan pending improvements by the Brazilian government. From 1985 onwards and especially following the first National

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1 The other two were the Indonesian Transmigration Programme and Narmada Dam in India.
B.M. Rich, 'The Multilateral Development Banks, Environmental policy and the United States', Ecology Law Journal, vol.12, No.4, 1985, pp.681-745.

Meeting of Rubber Tappers held in Brasilia in October of that year, increasing contacts developed between grassroots leader from the Amazon region, and environmental and development organisations in North America and Europe. Rubber tapper and Indian representatives travelled to lobby multilateral development institutions and governments and met the grassroots activists in the North. These, environmental questions were emerging on the serious political agenda, the Brundtland Commission was preparing its report and the prevailing climate, reinforced by the successful joint lobbying, led to increasing difficulties in gaining approval for development loans to Brazil at a period when the internal financial crisis was deepening further and the Sarney government was desperate to receive the new credits, such loans represented.

The meeting of the environmentalists and forest peoples resulted in mutual discovery that not only were the resistance strategies designed to increase social justice, but also promoted environmentally sustainable forms of natural resource management. Traditional forms of extraction practiced by the forest peoples were protective of the tropical rainforest of the Amazonia. If improved, they offered the possibility of a radically different approach to regional development policy, not only protecting natural resources but moving from a

strategy of resistance to one of growth and increased satisfaction of basic needs. The notion of 'extractive reserves' for non-indigenous populations took shape (indigenous communities have constitutional rights to the lands they have traditionally occupied, although proper demarcation has occurred in only a small proportion of the total communities. An increasing body of research tends to confirm the thesis that forest-based developments is not only socially just and environmentally sustainable, but is also economically more attractive than the alternatives. For example, one study concluded, 'Present net value analyses indicate that the financial worth of the forest is two or three times higher than that of alternative land uses such as cattle ranching or plantation management. Fruit and latex represented over 90 percent of the total market value of the forest. Based solely on the economic criteria, the opportunity costs of cutting species-rich Amazon forest are estimated at $ 9000 hectare.[2] Reinforcing these arguments, a study of cattle ranching in the Amazon estimated that during the 1970s subsidies of the order of $ 4,000 were present in every ton of beef produced, at a time when beef was available on the international market for $ 1,000 a ton.[3]

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2 J.O. Browder, 'The Social Costs of Rainforest Destruction', Interciencia, vol.13, No.3, May-June 1988, pp.115-20.

3 C Peters, A.H. Gentry, and R. Mendelsohn, 'Valuation of an Amazonian rainforest', Nature, vol.339, June 1989, pp.123-7.

Whilst environmentalists and economists were arriving at a consensus opinion that the political demand of forest peoples were both appropriate and viable, the questions of democracy and citizenship were occupying the centre of the political stage. The constituent assembly met throughout most of 1987 and 1988. For the first time, provisions were made for the presentation of public amendments.

The trade union movement, the churches and civil society (non-governmental organisation, grassroots associations, human rights groups and campaign for all persuasions) mobilised to submit their demands. The federal constitution that was promulgated in late 1988 reflects the intensity of lobbying at that time. If civil society convencingly lost the question of land reform to the landowners' lobby, significant advances were made on environmental questions and indigenous peoples' rights. Within the general effervescence of civil society lay the foundation of the PV, Brazil's Green Party, and the growing importance of environmental issues within the political debate generally, mirroring developments in other parts of the world.

The year 1989, saw the convergence of the three strands. The rate of increase in the annual mid-year burnings of cleared forest was such that by 1988, both

Brazilian and International public opinion was concerned. The lobby on multilateral financial institutions was apparently reducing new financial flows to Brazil to trickle at a time of economic crisis. Military and government opinion denounced this as an attack on sovereignty. (Though most ofthe drying up of financial flows had to be attributed to lenders' reluctance to approve loans without substantial correction of the Macro economic situation, something the Sarney government was incapable of achieving). There was increasing foreign media coverage of Amazon issues. And in December 1988, the best known Amazon grassroot leader, Chico Mendes, was assassinated by a rancher, who plans for evicting rubber tappers from a newly acquired estate had been thwarted. The year 1989 thus saw the Brazilian government on the defensive. Under intense diplomatic and media pressures, it changed an initially aggressive nationalistic response to a recognition of the need for reform. The media attention surrounding the meeting in Alfamira called by the Kayapo Indians to protest about planned hydro-electric project in the Xingu Valley ensured the pressure on the Brazilian authorities was maintained.

A reasonable evaluation of the period from the murder of Chico Mendes until the end of the Sarney government in March 1990 would be that something of a

stalemate was obtained. The government claimed that increased control, fines and a media campaign led to a 30 percent reduction in the area of the forest cleared between 1988 and 1989. Attempts were also made to control the use of mercury in gold prospecting in the Amazon. Subsidies for cattle ranching in the tropical rainforest areas were abolished.

On the other front, the 1988 Constitution established an independent section within the prosecutor general's office to act as a constitutional watchdog acting in the public interest. This section, the Ministerio Publico Federal, began bringing cases to the federal courts. It concluded that Labour conditions in the rubber estates of Western Acre were analogue to slavery, leading to a federal police investigation and the creation of an extractive reserve. It also acted on behalf of the indigenous communities rights, most prominently in the case of Yanomani Indians of Roraima whose lands had been invaded by gold prospectors. It sought and obtained a federal court injunction declaring the Yanomani area subjudice to all except the Yanimani and obliging the federal government to remove all 45,000 garimpeiros.

On the positive side, the situation at the beginning of the Collar government is one where there is increasing mobilisation around Amazon protection and natural-resource-use issues, both on the part of local populations and wider Brazilian society. A growing expectation that democracy and appropriate planning policy for Amazon, as for every other sphere of national life, imply mechanisms of public consultation and participation. In the case of the Amazon region, significant sectors of the local population have demands and proposals with respect to the sort of regional development strategies and provision of services they expect over the coming years.

From another angle, the picture looks less encouraging. The political weight of ranchers, mining companies, garimpeisis and other economic forces with a vested interest is perpetuating the status quo (manufacturers of agricultural implements, vehicles and fertilisers for example) is clearly for greater than that of forest peoples, not withstanding their international support networks. The military propensity to view the region through a geo-political prison will remain unaltered. A galaxy of foreign importers will want to ensure that the steady supply, at favourable prices of Amazon-originating products continues. Over

90 percent of all Brazilian exports of mahogany in 1987 went to one of the three destinations: the USA, the UK and the republic of Ireland. Japan has clearly identified the Brazilian Amazon as a major long-term supplies of basic rawmaterials, especially minerals and timbers As the largest timber importer and with the exhaustion of timber sticks in Southeast Asia, Brazil is an attractive source. Japanese investments in Carajas programme and other mining ventures in the Amazon has been substantial.[4]

Speculation on what the Collar government may or may not do in respect of Amazon policy is more difficult than most exercises of future. As a maverick candidate, with no party base and an ill-defined election programme policy in all areas, his government is difficult to predict. Apparently successful at judging public moods and tastes, Collar is aware of the expectations, domestic and foreign, that centre on his handling of environmental issues. Perhaps as much as his handling of economic affairs, environmental performance will determine his international standing.

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4 Antony Gross,"Amazonia in the Nineteen:Sustainable development or another decade of deforestation", Third World Quarterly, vol.XII, Nos. 3 and 4, Winter 1990-91, pp.1-14.

In terms of voters intentions, much presumably hangs on economic measures to be taken to reduce the hyper-inflation levels reached at the end of the Sarney government. These must include effective renegotiation of the foreign debt, which as we have seen, is being serviced in large measure by the increased export of Amazon products. Under Collar's government, the government documents meats a lot of the demands of the environmental lobby. It promises participation for nongovernmental and community organisations in the formulation and implementation of the policy. It refers to freedom of access to information. Amongst other measures, the document promises that debt for nature swaps will be favourably examined. This is a departure from the previous policy, adopted in response to the military reaction, of regarding such proposals as unacceptable infringements of sovereignty.

In January and February of 1990, as president-elect Collar made a three week tour to the USA, Japan, the USSR and Western Europe. It seems clear that level of concern on environmental questions encountered on this tour, at both official and public levels convinced the new government that environment had to be a priority, at least in the sense of adopting measures that would cause an impact sufficient to reverse the prevailing negative public image of Brazil abroad.

The appointment of the well-known environmental activist Jose Lutzenberger, as secretary for the environment in Collar government has to be seen from two angles. The first is that of a populist strategy of playing to the galleries, signalling to observers (in this case both home and abroad) that Collar era represents a break with the past. The second angle has to do with the style of the Collar government and changes in the structure of the executive branch. The number of ministeries has been drastically reduced. This may indeed have beneficial effects in countering the traditional behaviour patterns of inefficiency, patronage and corruption exhibited in previous governments.

Lutzenberger is reported to have imposed four conditions for accepting the appointment: the postponing of the continuation of the BR 364 Highway westwards from Rio Branco (Acre) to the Peruvian border to form a pacific outlet; the closing of the charcoal-burning pig-iron smelter set up along the Carajas - Sao Luis Railway; the removal of tax holidays for investments in Amazonia and respect for the peoples of the Amazon forest.

The tax holidays were indeed abolished in the sweeping economic measures announced the day after Collar took office. The postponing of the road and closure of

the smelters are unlikely to be easy political battle to win. The state government of Acre and the local business interest displayed an immediately hostile reaction to the suggestion that the road cannot be considered before rigorous environmental safeguards are in place.

Thus, despite the rhetoric and the appointment of an environmentalist as Secretary, the future is not necessaryily bright. The dilemma is clear. As a general conclusion, the most effective forms of environmental protection in threatened ecosystems may come from the experience of local constituencies with a direct interest in preserving the resources. Ranged against these local constituencies, however, there are others with direct interest in exploiting the resource; ranchers, loggers, gold prospectors and others. They not only represent and important political constituency (and a capacity to impose their will by force), but also a more immediately realiable and quantifiable production of wealth. Politicians tend to be reluctant to forego short term benefits for long-term social gains. It requires courage in the face of vested interests, political room for manoeuvre and a capacity to absorb the benefits foresees all these attributes, but is too early to tell. What is forseeable is that the environment Secretariat is

going to have a difficult time standing up to those business and political interests that seek to maintain the status quo of Amazon policy and to the military, to whom grassroots social movements supported by outside public opinion continue to smack of subversion conspiracy and an affront to sovereignty. In the face of this, the appointment of the Secretary of the environment, who is known for his strongly held ideas, short fuse and distaste for politics and the minutiae of administration, working to an autocratic and centralising president, creates an inherently unstable situation, and it is impossible to predict its outcome.

At best, it can be hoped that Brazil really has entered a new stage where the effective exercise of citizenship in planning Amazonia, as in every aspect of national life, becomes a right assured and not a right denied by the perpetuation of an authoritarian political culture; where the needs and demands of the traditional occupants of Amazonia will take preference over the pressure from those with a vested interest in environmental degradation; where modernity is equated with sustainable, equitable, participatine forms of development, rather than reverse. At worst, we may be about to see a severe case of environmentally-friendly

demagoguery. By the time the UN world conference on Environment and Development meet in Rio de Janeiro in June 1992, the picture should be clearer.

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