

More of the Same: Amazonian Agricultural Development
in the Brazilian Carajás Programme

ANTHONY HALL*
London School of Economics

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Summary - The huge Carajás mining and agricultural development scheme situated in Brazilian Amazonia will, on the basis of recent evidence, exacerbate current social and economic problems within the region. Agricultural priorities in the programme in favour of corporate, export-oriented farming, ranching and extractive activities will, instead of strengthening the crucial small farming sector, place it under even greater strain than in the past. Unless current policies are modified, Amazonia is likely to witness a worsening of trends which have emerged over the past two decades with official encouragement, namely, land conflict, concentration of land ownership, landlessness and a relative decrease in the area devoted to food crops.

1. INTRODUCTION

The Greater Carajás Programme (Programa Grande Carajás - PGC) is a vast development scheme situated in the Eastern Amazonian region of Brazil. It covers an area of some 800,000 square kilometres in the states of Maranhão, Pará and Goiás, 10.6% of the whole country and

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an area the size of Britain and France combined. Involving a total estimated investment of US\$62 billion, Carajás is a multi-sectoral programme whose revenue will derive principally from the production, processing and export of unusually rich and concentrated deposits of minerals such as iron-ore, bauxite, copper, manganese and cassiterite. Yet although mineral wealth will form the basis of what has officially been called 'the largest integrated development programme in the world' (Brazil, n.d.) other less publicized but significant aspects of the scheme embrace forestry and, particularly, agriculture which is the major focus of this paper. Crop and cattle production are expected to absorb 25% of total investment, to generate 40% of the scheme's total annual income and to create the bulk of an estimated one million new jobs in the region produced by the PGC (IBASE 1983).

Carajás has spearheaded the latest phase in Amazonian development in which both national and regional hopes have been pinned on the expansion of corporate, export-oriented mining and agricultural activities. Although the latter aspect is still in its infancy, there is every indication that agricultural developments will follow the general pattern established in Eastern Amazonia, the major features of which may be summarized as follows :

1. Intense, often violent conflict over land occupation and ownership between small holders producing mainly for subsistence needs and encroaching commercial interests, a process known in Brazil as grilagem.
2. A consequent tendency towards the concentration of land ownership and the expulsion of the poorest and most defenceless farmers to marginal and more distant frontier regions such as Rondônia and Acre. *What evidence*
3. Conflicts between indigenous groups and colonizers, both large and small, as pressure on land increases and tribal reserves are violated.
4. An expansion of the area devoted to export crops, to cattle-raising and to non-food products such as alcohol distilled from sugar-cane and manioc. Concomitantly, the area set aside for domestic and local food

requirements is inadequate, leading to shortages and price increases in basic foodstuffs as well as nutritional repercussions on the population.

5. In general terms, continued focus on frontier expansion and land settlement allows attention to be diverted from what many observers believe to be the more important problem of land reform in the North-East, from where so many land-hungry peasants start their journeys across Amazonia in search of a livelihood (Ianni 1979).

2. THE CARAJÁS PROGRAMME

The PGC was instituted by decree-law no. 1,813 of 24 November 1980. An interministerial council was created for the programme within the Planning Secretariat, attached to the office of the President of the Republic and headed by the Minister of Planning. The backbone of the scheme will be the mining of a wide range of ferrous and non-ferrous metals, in which Brazil expects to be self-sufficient by 1990 (LACR, 31 August, 1984). Deposits include 18 billion tonnes of high-grade iron-ore, reputedly the largest in the world, 60 million tonnes of manganese, 40 million tonnes of bauxite, 47 million tonnes of nickel, 37 million tonnes of cassiterite and substantial quantities of other metals such as copper and gold (Brazil, n.d.) Apart from the Carajás iron-ore complex itself, the other major mining enterprises consist of two integrated aluminium projects. The Alumar alumina-aluminium mill in São Luis is a partnership between Alcoa (USA) and Billiton Metals (a subsidiary of Royal Dutch/Shell) which started production in 1984 and is expected to contribute one-quarter of Brazil's total output of 800,000 tonnes a year, 70% of which will be for export. In Barcarenas, near the city of Belém, the Albras-Alunorte complex is financed by a consortium of 30 Japanese aluminium smelters and the Japanese government, together known as the Nippon Amazon Aluminium Company, in combination with the Brazilian State-owned Companhia Vale do Rio Doce (CVRD), which also has charge of the Carajás iron-ore project. Albras-Alunorte was due to come on stream in 1985 and

aluminum
(iron-ore)

by 1988 is expected to produce 320,000 tonnes of aluminium a year, over one-third of national output (LARR, 17 September, 1982; LACR, 31 August, 1984).

Infrastructural improvements will accompany this expansion of mining activities and substantial investments are planned for the growth of rail, road, river and air transport. Two major port developments at São Luis and Barcarenas will enable deep-draught ships to export mineral products, while a new 900 kilometre railway will link the Carajás iron-ore centre to São Luis. One-quarter finished, it has already cost US\$1.5 billion and, when completed, will carry trains comprising 160 carriages with a total length of two kilometres (Veja, 9 November, 1983; Railway Gazette International, February, 1984). The huge amounts of electricity needed for aluminium smelting, for the railway when it is eventually electrified and for urbanization will be provided by the controversial Tucuruí hydro-electric scheme. The flood-gates were closed in October 1984 and, by 1990, it is expected to generate 5,000 MW at a total capital cost of US\$5.2 billion. Tucuruí, the largest dam ever to be built in a tropical rainforest, is merely the first of eight large and 19 small dams planned for the River Tocantins. Eventually, a series of 40 dams on Amazonian rivers will produce 22,000 MW or 40% of Brazil's projected requirements, ostensibly with the aim of attracting foreign investors through heavily subsidized electricity prices (Barham and Caulfield, 1984). Two new airports have been constructed at Tucuruí and Carajás, highway improvements are being made and locks on the Rivers Tocantins and Araguaia will make them both navigable right into the heart of the PGC area.

The stated aim of the Carajás programme is the rapid exploitation of Amazonia's natural resources in order to generate foreign exchange through exports as a means of helping to service the Brazilian foreign debt, which

currently stands at around US\$105 billion (IBASE 1983). Foreign funding is playing a major role in developing Carajás. For iron-ore mining the EEC is providing a US\$600 million loan towards the initial cost of US\$1.8 billion, while Japan is supplying US\$450 million and the World Bank was expected to provide further funding (LARR, 17 October, 1982). Steel companies in EEC countries have signed long-term contracts with the CVRD for iron-ore at unspecified 'favourable prices' (Caulfield, 23 March, 1984). Foreign investors are also being given incentives such as exemption from payment of income tax for ten years for all projects established within the PGC before 1990, generous import quotas, priority in the allocation of bank credit, infrastructural improvements and electricity supplies at a 30% discount as well as other inducements such as lax pollution controls and cheap labour (Jornal do Brasil, 29 July, 1984; Caulfield, 23 March, 1984).

3. THE OCCUPATION OF BRAZILIAN AMAZONIA

Before examining the agricultural development plans associated with the Carajás programme, it is worthwhile sketching out the major phases through which Amazonian policy has passed. This will serve both to place discussion within a wider historical context, and also to show how the latest official thinking is likely to accentuate rather than ameliorate existing tension and inequalities in the region.

(a) Major Phases.

Development of Brazilian Amazonia has gone through several distinct phases since the first colonizers penetrated the region in the sixteenth century. Until fairly recently its economy was based on sporadic extraction of native forest products such as nuts, rubber and some forestry. The nineteenth century rubber boom encouraged migration from the North-East, particularly during the massive drought of 1877-79. After 1900 peasant families started to move westwards to Maranhão, Pará and Mato Grosso, a flow which increased during the 1950s. This was supplemented by a movement of wealthier farmers from the South into Goiás to set up cattle ranches,

squeezing out peasant families who moved further north, advancing the agricultural frontier with their subsistence farming. Thus, although to a certain degree trends currently observable in Amazonia can be traced back several decades, they remained relatively small-scale until the government decided to play a more active role.

Federal intervention to stimulate the occupation of Amazonia dates only from 1953 with the establishment of the first development agency for the region, the Superintendency for the Economic Valorization of Amazonia (SPVEA). Its purpose was to encourage the production of raw materials, to make the region self-sufficient in food, to improve transport and health facilities and to generate urban expansion. Directly attached to the Presidency of the Republic, the SPVEA administered a fund which provided fiscal incentives for projects at a series of 16 'growth poles'. However, the SPVEA's investment schemes failed to have any lasting impact except perhaps for the Belém-Brasília highway, constructed in 1960 and the first of the major roads which now cross Amazonia (Mahar, 1978; Katzman, 1976).

The military coup of 1964 was followed by a far more aggressive and systematic policy of Amazonian development which has continued uninterrupted to the present day. In 1966 the Superintendency for the Development of Amazonia (SUDAM) was established to replace the SPVEA, linked to the Ministry of the Interior and modelled along the same lines as its sister organization in the North-East, SUDENE. Earmarked funds for the region fell from 3% to 2% of the federal budget and more reliance for the generation of capital was placed on fiscal incentives, which gave tax exemptions of between 50-100% as well as other concessions in an attempt to attract investment from the South of Brazil and from abroad. The deposits thus acquired were placed with the newly created Bank of Amazonia (BASA) and the funds used in the service sector, agriculture and industry. Most of the agricultural projects were cattle ranches, which

created very few of the estimated 45,000 jobs established by SUDAM from 1967-71 (Katzman, 1976). This represented the beginning of a trend which was substantially strengthened later on.

Official intervention in Amazonia acquired a new impetus following the calamitous North-Eastern drought of 1970. Under the Plan for National Integration (PIN) and the First National Development Plan (PND I, 1970-74) President Medici and his advisors conceived the idea of building the Trans-Amazon highway to act as an 'escape valve', syphoning off landless rural poor from the drought-stricken North-East and resettling them on official colonization schemes in Amazonia, thus uniting 'men without land to land without men'. Yet the reasons for going ahead with such ambitious plans went beyond humanitarian concern for drought victims, or even the notion of diverting attention from the pressing need for land reform in the North-East. A major geo-political objective was to consolidate military control over the region in view of the small but threatening Araguaia guerrilla struggle in Eastern Amazonia. Small groups of Maoist guerrillas had escaped to southern Pará from São Paulo following the suppression of urban terrorism in 1968. Although not considered a serious security threat as such, 'they were a warning, for their area of operation was not too far from Brazil's 18,000 million tons of iron-ore reserves in the Serra dos Carajás which were now waiting exploitation' (Bourne, 1978, p.57). In addition, the Trans-Amazon highway and other major roads which linked the Amazonian forest to major urban centres acted as a symbol of national unity and progress, national integration and frontier occupation (Sorj, 1980). Further pressure came from the strong road-building lobby in Brazil (Bourne, 1978) and other commercial interests which were to profit from this policy.

By 1972 the first 1,200 unpaved kilometres of the Trans-Amazon highway were completed and the newly-created National Institute for Agrarian Reform (INCRA) had planned a series of communities at fixed distances along the road based on the agrovila (50 families), the agrópolis (20 agrovilas) and the rurópolis (town) situated at 140 kilometre intervals. Colonists

were given 100 hectare plots with provisional land titles and promised all supporting services. However, the policy of directed resettlement was a relative failure. Although there was an initial rush of applicants from the North-East and, at first, INCRA could not keep up with the demand for plots of land, disillusionment set in rapidly. By the end of 1974 only 6,000 families had been resettled, less than 10% of the official target (Mahar, 1978). Many reasons have been cited for this shortfall, the major one being that the government did not in fact provide the institutional support services which farmers need to make a living in such a relatively hostile environment. Lack of schools, housing and medical facilities added to the harsh conditions (Wood and Schmink, 1978). The haphazard nature of planning during this period is illustrated by the fact that no feasibility studies were carried out before the policy was executed, so that only in 1972 was the poor quality of the laterite soils along the Trans-Amazon highway discovered. They proved to be highly unsuitable for the short-cycle crops such as maize, manioc and rice which the colonists grew, causing soil erosion and loss of fertility, producing low yields and encouraging pests (Goodland and Irwin, 1975). In 1973 many farmers were tied to their Amazonian plots only by their debts to INCRA, whose optimistic economic projections based on the production of high-grade commercial crops had not been realized (Kleinpenning, 1975). Yet although official colonization under INCRA was unsuccessful by and large, it has been claimed that given proper planning and strong government support, smallholder agriculture in Amazonia is economically viable (Moran, 1981).

In the latter half of the decade there was a significant policy change in which small farmer colonization was abandoned in favour of attracting large-scale, corporate activities such as mining, cattle farming and forestry. These changes were embodied in the Second National Development Plan (II PND, 1975-79) and the POLAMAZONIA proposals. By 1975

INCRA had become primarily concerned with selling off land along the highways in large plots to wealthier farmers partly in an attempt to recoup its losses, incurred as a result of the high costs and poor planning of directed colonization, partly as a result of policy changes under POLAMAZONIA and partly under pressure from Southern business interests such as the São Paulo-based Association of Amazonian (sic) Businessmen which wanted to acquire large areas for cattle ranching and private colonization schemes (Bunker, 1983). From 1972-74 INCRA distributed one million hectares but from 1975-77 the institution sold off 1.7 million hectares (Bourne, 1978). At the same time, INCRA switched its attentions to the newer frontier zones of Roraima, Rondônia and Acre which were being opened up by highway construction and were receiving large waves of spontaneous migrants both from the increasingly conflict-ridden areas of Eastern Amazonia as well as from Southern Brazil, where small farmers were being displaced by the growth of large-scale, mechanized soya bean cultivation (George, 1977; World Bank, 1981). The new entrepreneurial emphasis in Amazonia was epitomized by the establishment of the Amazonian Land Programme in 1975 which planned the introduction of 61,000 family farm units, 1,200 larger farming enterprises and four agro-industrial projects, stressing the need for private colonization schemes as offshoots of already established projects in the South of the country. A host of such private colonization schemes was established, yielding large profits to the landowners in the financial transactions which ensued. Preference was given to farmers from the South rather than those from the more impoverished North-East, who were considered to lack the necessary entrepreneurial skills (Bourne, 1978; Ianni, 1979).

A major thrust of Amazonian occupation during the mid and late 1970s was the establishment of cattle ranching. Generous tax incentives from SUDAM combined with the low price of land and high world beef prices made this an attractive proposition to wealthy landowners as

well as industrial interests with excess capital to invest. The government provided additional encouragement by undertaking a large-scale highway building programme in the region, totalling some 10,000 kilometres, which provided a transport network south of the River Amazon, a region which had previously been inaccessible (Branford, 1985). Huge ranches were set up, reaching 500,000 hectares in size, by companies such as Volkswagen, the Brazilian National Credit Bank (BNC), Liquigas of Italy, and Deltec, Swift Armour and King Ranch of the USA, to name but a few (Bourne, 1978; Veiga, 1975). Of 570 projects granted SUDAM fiscal incentives during the period 1965-79 some 330 were devoted to livestock production, absorbing US\$391 million of a total investment by SUDAM of US\$1 billion (Barbira-Scazzocchio, 1979). The four largest ranches obtained tax rebates of over £47 million, over one-tenth of the total (Branford, 1985). Even the FAO and the World Bank saw fit to provide financial assistance for cattle-raising to boost beef exports (George, 1977; Veiga, 1975).

Such optimism as there was initially has been curtailed by the failure of many cattle estates due to problems of soil erosion and leaching following the drastic methods used to clear the lands of forest cover, including the use of bulldozers and chemical defoliants (Goodland and Irwin, 1975; Branford, 1985). Added to this was the practical difficulty of administering these enterprises without the large initial subsidies provided by SUDAM. Other criticisms of this policy relate to the low employment-creating capacity of cattle ranching and its high costs, one job in this field requiring an investment of US\$63,000, double that of a job in the industrial sector (Barbira-Scazzocchio, 1979). Furthermore, social conflicts were exacerbated by the failure of companies and local authorities to observe basic rules. Every ranch was supposed to obtain a declaration from the local council and the Indian agency FUNAI that there were no occupants on the land intended for cattle development but this precaution

was often ignored. Due to a combination of problems, therefore, many ranches have been abandoned and only a handful with the necessary resources and managerial capacity have been able to continue in production (Branford, 1985). Without government funding of 70% of the costs of livestock production cattle ranches would not have been economically viable propositions. This has led some observers to conclude that the prime motive was speculative rather than long term investment (Barbira-Scazzocchio, 1979).

(b) Land Concentration, Conflict and Landlessness.

The consequences of this post-1974 policy of Amazonian occupation have been marked and have set the tone for current strategies within the region. First and foremost, rather than providing the opportunity for a more balanced pattern of smallholder occupation by farmers from land-scarce regions of the country such as the North-East, it has merely reproduced the highly skewed pattern of landholdings found in these same regions. In the Centre-West of Amazonia, for example, this has become evident with colonization; properties of less than 10 hectares account for 25% of the total number of holdings but occupy only 0.3% of the cultivable land, while 0.9% of holdings (940 farms) with over 10,000 hectares control 29% of the land (Goodman, 1978). Further evidence comes from the area of Conceição do Araguaia in the state of Pará where, in 1972, 961 large properties comprising 59% of landholdings occupied almost 98% of the land and were engaged in a process of increasing concentration (Foweraker, 1981). Government fiscal incentives have merely encouraged this trend, favouring large units. The average size of ranch receiving SUDAM credits was 30,000 hectares (Pinto, 1977). In fact, about 95% of new farms in the Amazon region occupy 10,000 hectares or more (LARR, 23 April, 1982). Many of the victims of land-grabbing or grilagem have been cultivating for several years the land from which they are expelled as squatters who arrived in Amazonia as spontaneous migrants. It has indeed often been claimed that many if not most large-scale Amazonian enterprises were only feasible

because of the deforestation and land preparation undertaken by the original smallholders either as farmers or, following expulsion, as temporary wage labourers (Sorj, 1980).

The competition for land between large and small-scale interests has produced intense, frequently violent land conflict. This is most pronounced in those areas which have been occupied the longest and which have the densest populations. The focal point of such tension is the Centre-West region of southern Mato Grosso and, more recently, the Marabá area of Eastern Amazonia, hub of the Carajás programme. The land commission (CPT) of the Brazilian Church estimated in 1981 that of a total of 915 reported land conflicts in Brazil, almost half occurred in Amazonia, affecting some 57,000 families (LARR, 23 April, 1982). Many of these confrontations have involved indian groups whose reserves and traditional lands have been threatened both by larger enterprises and by small farmers who have been pushed further and further into marginal and new frontier areas by land-grabbers. Such clashes have been extremely well documented and details need not be repeated here (Ianni, 1979; Foweraker, 1981; Assellin, 1982; Souza Martins, 1984). It is important to note, however, that the problem of land conflict has become an increasingly serious one for the government especially since rural syndicates in the affected areas and at national level have become better organized and able to lobby more effectively in defence of small farmer interests. Furthermore, the radical wing of the Brazilian Catholic Church has been instrumental in publicizing the issues and in providing logistical support for farmers under threat of dispossession.

The Brazilian government has responded by placing land affairs under more centralized control. As a direct result of the struggles over land two commissions have been created to regulate the situation in the worst affected areas. In 1980 an executive group for the Araguaia-Tocantins region (GETAT) was formed, responsible for an area of 45 million hectares

where the state borders of Goiás, Pará and Maranhão converge, the most volatile region and at the heart of the PGC, near to the mining complex. The government has been concerned to end peasant unrest and has given GETAT special powers to expropriate lands and grant titles of up to 500 hectares. In 1981 alone GETAT issued 10,000 land titles and settled 3,700 families (LARR, 23 April, 1982). A similar body (GEBAM) was set up for the lower Amazon region which includes the Jari project, originally established by the American businessman Daniel K. Ludwig and subsequently taken over by a consortium of Brazilian companies at the behest of the Brazilian government. A Land Ministry was created in 1982 to assume many of the tasks performed by INCRA to do with land redistribution, colonization and tax collection. However, these measures have not generally been viewed as providing any long term solution to the land question in Amazonia since they do not regulate the on-going process of occupation in its initial stages in order to prevent such conflicts from taking place in the first instance. It is seen as essentially a 'mopping up' operation in which peasant farmers take second priority to larger landowners and are left with the poorest lands once the more powerful interests have been satisfied (LARR, 11 February, 1983; Souza Martins, 1984). It also seems reasonable to conclude that the authorities are anxious to pacify the region in preparation for developing the Carajás mining and agricultural programme.

3. AGRICULTURAL DEVELOPMENT AND CARAJÁS

Although agricultural development is the least publicized aspect of the Carajás programme it will be a major recipient of investment funds and produce a large proportion of total revenue. No plan for agricultural expansion has yet been finally approved but those initial ideas which have been put forward, seen within the broader context of Amazonian occupation described above, provide an indication of the likely direction of

developments in the non-mining sphere of activities. The first draft plans for agricultural development of the PGC are unashamedly grandiose and latifúndio-biased. Rural schemes would take up 10 million hectares; three million hectares to be divided up into 300 cattle ranches of 10,000 hectares each; four million hectares to large-scale rice production; 180,000 hectares and 156 processing plants would be devoted to the production of manioc pellets for animal fodder; 300,000 hectares would be set aside for rubber-tapping for export; 2.4 million hectares were to be for sugar and manioc plantations, whose 145 and 690 distilleries respectively would produce 5.4 million litres of alcohol per annum (Pinto, 1982). These somewhat ambitious proposals drawn up by the CVRD (1981) have not got beyond the preliminary planning stages.

However, more recent proposals put forward by the company re-emphasize the role to be played by highly capitalized, export-oriented farming. Low capital units are ruled out as unsuitable for the region which, it is suggested, will need mechanized farming and expensive inputs to produce adequately high yields (CVRD, 1984). The heavy emphasis on export crop production has been strongly influenced by technical advice received from the Japan International Cooperation Agency (JICA). Already with a financial stake in the PGC mining project and an involvement in mechanized soya bean farming in the savanna grasslands or cerrado of the central Brazilian plateau (San Martín and Pelegrini, 1984), JICA has maintained a strong interest in agricultural expansion within the PGC. The agency carried out a feasibility study which recommended production of soya beans, rubber, palm oil and tropical fruits, all considered to have good export potential (JICA, 1983).

The Brazilian Agricultural Research Company published its own plan (EMBRAPA, 1982) for developing the Carajás region based not on destroying the tropical rain forest but on cultivating abandoned pastureland and the savanna grasslands to the south. Involving heavy private investment in machinery, pesticides and fertilizers, it has been criticized for relying too much on scarce entrepreneurial capacity and for over-optimistic production targets (Baiardi, 1982).

However, it has the advantage of being far less dangerous ecologically and could avoid the pitfalls which have characterized agricultural development in areas of tropical rain forest (Goodland, 1980).

The latest and most complete plans, prepared by the Ministry of Agriculture, appear to take a more balanced and socially realistic approach to the question. Although still framed very much in technocratic terms of increased production and commercialization of farming, they do for the first time in any official PGC document recognize the existence of land conflicts. In addition, they identify small and medium-sized producers as priority target groups within the Carajás region (Brazil, 1983). Funded by the Inter-American Development Bank (IDB), official action would be concentrated on seven agricultural 'development poles' and, through the increased capitalization of farming, would raise the total gross value of production from its current estimated level of US\$42 million to US\$317 million, at the same time generating an extra 60,000 jobs. The plans include the development of forestry, fishing and cooperative-based agroindustry, as well as a continuation of land regulation through INCRA and GETAT and some directed colonization. The major priorities in crop production are soya beans, rubber and sugar-cane in addition to some vegetable cultivation to supply the rapidly expanding urban centres of the Carajás region.

Although these proposals from the Ministry of Agriculture have taken a step away from the latifúndio-biased plans drawn up by the CVRD, it seems unlikely that they will do much towards ameliorating the long term trends within Amazonia. As has already been mentioned, for example, GETAT is doing little to regulate the process of initial settlement to guarantee poorer farmers access to titled lands. In general terms, the PGC programme seems to have increased rather than diminished the land struggle. The Carajás-São Luis railway cuts through 14 indigenous tribal areas with a population of 4,500 and, while the World Bank has allocated US\$3.6 million to assist these groups with land titling, agriculture and other projects, it is predicted by some that competition for land along the line will result in an aggravation of conflict (Folha de São Paulo, 8 December, 1984). Anthropologists report that the PGC will have adverse effects on 25 indian groups with 10,000 members (Ferraz, 1982). These fears are reinforced by official reports highlighting

the risk that the indians will receive little benefit from the injection of new funds, which, if not properly administered, may totally distort the internal structure of indigenous communities (Gomes, 1984).

An indication of trends within the agricultural sector of the PGC is given by the handful of projects so far approved under the system of fiscal incentives drawn up especially for the scheme, which exempts those undertaking projects in the area before 1990 from payment of income tax for a period of ten years. The latest available figures show that they consist of large-scale cattle, forestry and processing factories for babaçú nuts and palm oil (Cota, 1984). The PGC's agricultural activities have been halted temporarily owing to the recent change of government in Brazil (Folha de São Paulo, 7 October, 1984). Yet even if they are eventually taken up, they do not get to grips with the basic problems of the estimated 800,000 families of smallholders and squatters in the Carajás region, fewer than 5% of whom would actually benefit from the PGC proposals (SBPC, 1983).

4. CONCLUSION

Agricultural developments under the Carajás programme will do little to ameliorate the generally observable trends within patterns of Amazonian occupation. If anything, the available information on planned proposals as well as those limited activities so far undertaken in the non-mining sector, indicate that they may well exacerbate them. These seem to fit the 'export enclave' model which has been a feature of Amazonia for the past two decades at least, characterized by (a) an emphasis on capital-intensive and land-extensive agriculture for export, (b) an intensification of landownership concentration biased towards large-scale, commercial farming interests, (c) an increase rather than a diminution of conflicts over land involving large estates, peasant smallholders and indigenous groups, and (d) a gradual expulsion of smaller farmers to newer frontier areas as larger interests take hold.

However, the indefinite continuation of potentially explosive social conflict in Amazonia cannot be an attractive one for any democratic administration in Brazil. In terms of building up populist political support there is much to be gained from a policy of rural development biased less towards larger landowners and more in the direction of small cultivators. It is also claimed that the maintenance of a

smallholder, self-provisioning peasantry is a necessary complement to the large-scale farming sector in Latin America, and particularly in Brazil, as a supplier of revenue to the State and as a source of the basic foodstuffs which the export sector is incapable of providing (Becker, 1982; Goodman and Redclift, 1981). A more pessimistic view of Amazonian strategy sees official policy towards the region primarily as a means of attracting the cheap labour needed to develop the area without allowing substantial small-scale landownership to take hold in a 'pre-emptive' strike by government and allied business interests (Branford, 1985).

Whatever the long-term perspective on the question of Amazonian development and the role of various groups within this process, recent evidence suggests that there will be, at least in the immediate future, an increase in polarization and conflict in the region as a result of official policy. This is amply illustrated by early developments within the Carajás programme. It is also reflected, for example, in the breadth of opposition generated among environmentalists, human rights groups and non-government organizations, who last year asked the EEC to suspend its US\$600 million loan to the PGC in view of the rapid deforestation, ecological damage and growing number of land conflicts associated with the Carajás scheme (EEC, 1984; Caulfield, 1984; Fearnside, 1984). It has been demonstrated that small farmer agriculture in Amazonia is viable even under harsh circumstances and despite, rather than because of, government support (Moran, 1981). Yet the policy bias against small farmers and in favour of larger landowners, motivated in their Amazonian enterprises by a combination of commercial and speculative purpose, has not allowed the true potential of smallholder agriculture to be adequately shown. An excellent opportunity could be provided by the Carajás programme, but unless current agricultural development plans for the PGC are remodelled and are backed up by a firm political commitment on the part of government, there seems little likelihood of any significant changes in the pattern of Amazonian occupation which has predominated for the past 20 years.

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