

Motives underlying the development policy

Economic motives

The idea that the Amazon basin could be further developed and enabled to make an important contribution to the progress of the remainder of the country was based upon the realisation that Northern Brazil is suited not only to the gathering of forest products, as people often used to believe, but also offers many other possibilities. The region possesses great natural wealth, the extent of which was still not precisely known in the 1970s, and which had been exploited hardly or not at all at the time.

Mineral wealth

The continuing geological explorations of the period 1965–1975 revealed that the Amazon region contains iron, bauxite, tin, copper, lead, zinc, aluminium, gold, silver, chromium, manganese, wolfram, haematite, uranium, thorium and ilmenite. Since the detailed mineralogical surveys were still in full swing (with the aid of modern aerial photography techniques) and had not yet been completed over large parts of Amazônia, the figures of the known reserves were subject to constant review. It was already accepted, however, that the then known reserves of iron ore, bauxite, tin and manganese, in particular, considerably exceeded the original expectations. In the Serra dos Carajás, in southern Pará, there were iron ore deposits with an average iron content of 65 % and a total reserve of certainly 8 000 million tons. The principal iron ore region known at the time covered an area of 160 000 hectares and was situated about 150 km southwest of Marabá (SUDAM/Banco da Amazônia 1972, 19; Kohlhepp 1971, 76 f.).³ This has opened up unimagined export prospects.

Nor were the raw materials lacking for a ceramics and a chemicals industry. Apart from gypsum, limestone, kaolin, rock salt and diamonds, central Amazônia contains extensive underground salt deposits. Diamonds are also to be found (Valverde 1968, 253).

The brown coal deposits were also thought to be very extensive and the Amazon region might even contain the largest reserves in the world. The existence of coal had been confirmed in the eastern part of the Amazon basin (catchment area of the Xingu

3 The estimates of iron reserves in de Serra dos Carajás vary somewhat according to the source and date at which they were made. The statistics given here are derived from an article in a Brazilian newspaper in the early 1970s.

river) (Kearns 1969, 542; Valverde 1968, 254). The water power present in the basin could certainly generate 6 million kilowatts, which was 11 % of the Brazilian hydro-electric potential (Daemon 1969, 350).⁴

There were also indications of the presence of petroleum and natural gas. The existence of important oil and gas fields was suspected, particularly in the neighbourhood of the Peruvian frontier and near the mouth of the Amazon. Experts of Petrobras even believed that the Amazon Basin might contain the greatest oil reserves in South America (Tocantins 1973, 6). Unfortunately, in the early 1970s no-one in Brazil had yet succeeded in tapping them, but the search was continued.

In view of this wealth of resources, people were understandably optimistic about the potentialities of mineral exploitation at the time. It was even believed that the Amazon Basin could become an important exporter of ores and other raw materials and that this would make Brazil less dependent upon coffee for its export trade than it was at the time. The ideas about the potentialities for mineral exploitation had, in fact, been fundamentally altered by the discoveries in the 1960s, since official reports from the early 1950s had still assumed that the Amazon was a region poor in *recursos minerais* (Tocantins 1973, 6).

That the ideas had completely changed was due mainly to the exploration work that had been carried out in the 1960s. At the beginning of the 1970s the investigations into the potentialities for the use of the Amazon region were intensified, as appears, for example, from the RADAM project (*Radar Amazônia*), which was carried out during the period 1972–1974 and had as its aim the mapping of 4.6 million square km with the aid of very advanced remote sensing methods. This project provided valuable data, both for the study of soil and vegetation and for geological and mineralogical investigation (Projeto Radam 1972).

The potentialities of forestry

There were also very great expectations in respect of the possibilities of forest exploitation. The Amazon region possessed the world's greatest complex of tropical forest, with many still little used kinds of timber. Nearly 80 % of the forest reserves of Brazil and one third of the total volume of timber in the world were to be found there in 1970 (Condurú 1973, 7). The total area of forest in the Amazon Basin was estimated at about 750 million hectares, of which about 350 million was situated on Brazilian territory. The volume of timber was estimated at about 70 000 million cubic metres (*Industrialização de madeiras* 1970, 1). If these were to be exploited more intensively than at present, Brazil could become an important exporter of timber. As a result of detailed forestry surveys there was already better knowledge than before of the location of the stands of timber most suitable for exploitation. Research into the practical uses of the different tropical timbers had resulted in an increase in the number of exploited species from 53 to 227 during the period (Presidencia de la Republica/Ministerio do interior 1974, 17).

4 Hydro-electricity was initially generated only in a small station at Paredão (Amapá). This station supplied power mainly to industries established in Macapá and to various large concerns in the territory of Amapá, including Brumasa and Icomi. A second hydro-electric plant was built at Curuá-Una, near Santarém. It was programmed to generate 20 000 kw in 1974.

Until 1970, the exploitation of this enormous timber reserve had been limited mainly to the vicinity of the great rivers. The total production had been relatively small. In 1968 the Amazon region produced less than 12 % of the timber exports from Brazil. In 1965 the region contained only 1.3 % of the number of timber processing and wood-working enterprises in Brazil (Soares 1971, 54; Knowles 1971, 25).

Production was kept low by the poor accessibility and the great distances to the home market, but an additional factor was the circumstance that only 20 or 30 varieties were regarded as being of commercial interest, which was only 5 to 7 % of the timber reserve (Soares 1971, 17). On average there occurred only ten trees per hectare, with a total volume of 45 cubic metres, that could be exploited commercially. Consequently, in 1968, four varieties of timber accounted for 93.4 % of the total export of timber from the North (Knowles 1971, 7; Soares 1971, 63). This situation was mainly the result of the very heterogeneous nature of the tropical rain forest and of the circumstance that, until then, the utilisation potential of only a limited range of trees had been developed.

A number of Brazilian bodies, including the Superintendência do Desenvolvimento da Amazônia (SUDAM), had been examining the possibilities for exploitation of the tropical forest in the late 1960s. Within the framework of these studies, experts considered particularly the problems surrounding the great heterogeneity of the tropical rain forest. They believed that they had found a solution in the establishment of industrial complexes served by large, easily accessible areas of forest and which did not limit their activities to the processing of one or a few kinds of timber, but used a great number for the manufacture of a wide range of products and, in addition, used the waste timber to generate electricity (*Industrialização de madeiras* 1970, 8). Certain varieties of timber proved to be suitable for paper manufacture and the heterogeneity of the forest was also no longer regarded as an insuperable obstacle to the establishment of this industry (*Industrialização de madeiras* 1970, 7).

Apart from the more intensive use of the heterogeneous forest, the forestry experts also considered reafforestation in order to obtain more homogeneous stands of timber. As soon as the exploitation of the forest began to increase, the possibilities for reforestation would obviously also become more favourable. This applied all the more so since the Brazilian *Código Florestal* had made it obligatory for enterprises using timber as a raw material to carry out replanting (Pandolfo 1972b, 4).

Although the possibilities for the establishment of industrial complexes and planting of more homogeneous stands of trees did not prove very successful in practice, the exploitation of the Amazonian forest could nevertheless be greatly increased. Even if the exploitation methods remained simple and half of the forest were cleared, Brazil would still be able to produce 1000 million cubic metres of timber per annum (Knowles 1971, 63).

Apart from the fact that the timber reserves were enormous, the Amazon region had the advantage of relatively level terrain. The waterways offered some possibilities for transport and Brazil was being increasingly opened up by highways. Another favourable factor was the constantly increasing demand for timber, both in Brazil and abroad. The Amazon region might consequently become one of the major timber producers of the world in the near future (Knowles 1971, 63). According to various experts,

forest exploitation by modern methods could become a profitable undertaking in the following decades, which would yield a quick return on investment of capital.⁵

The possibilities for the expansion of tropical tree and shrub crops

Apart from the possibilities for a greater exploitation of the forest, the Amazon region also offered wide possibilities for the production of various tropical tree and shrub crops. The Amazon Basin is climatically suited to the production of numerous agricultural crops. Although the low fertility of the greater proportion of the soils constitutes a less favourable factor, this limitation applies least to trees and shrubs, since they produce humus and provide shade, thereby limiting the washing away of the soil and the burning up of the humus which has been formed. It was also thought that the limited soil fertility could be improved through the application of correctives (lime) and fertilisers.⁶

There were good possibilities for the growing of oil palms, especially since there was potentially a good market for oils and fats, both at home and abroad. Experiments raised the expectation that the oil palm would give higher yields per hectare than in Africa (*A Sudam e a cultura do dendê na Amazônia* n. d., 4).

The cultivation of cocoa also offered prospects, according to the agricultural experts, especially since there was good potential for this product on the international market (Condurú 1973, 25).

It was also considered reasonable to encourage the production of natural rubber. Brazil, the homeland of the rubber tree, was still unable to meet its natural rubber requirements from home production, so that about 16 000 tons (30 %) had to be imported in 1971 (Ministério do Interior 1971b, 39). The demand would rise still further over the years, which made an increase in home production all the more urgent.

Since the Japanese had successfully introduced pepper cultivation in the Amazon region in the 1940s, good prospects were also seen for the further expansion of this crop. The attractive thing about pepper cultivation was that it provided very high incomes per hectare (Kleinpenning 1973, 146).

Lastly, an expansion was also considered possible of the production of tropical fruits, such as pineapples and Brazil nuts, of tropical fibre crops, such as jute and malva, and of various other crops, including soy, both for the home market and for export (Condurú 1973, 25).

The possibilities for more livestock farming

There was also optimism about the possibilities for livestock farming. Millions of hectares of grazing land could still be created, particularly on the southern fringe of Amazônia Legal, where the vegetation is less dense than in the more northerly *selva*. In the somewhat higher region near the frontiers with Venezuela and Guyana savannahs occur, where livestock farming could be considerably expanded if only better outlets could be found.⁷ This would enable Brazil to become an important exporter of meat and

5 This idea is to be found in various official publications, including *Industrialização de Madeiras* (1970).

6 We would refer here to the detailed soil and climatic analyses in Falesi *et al.* (1972b).

7 Savannahs covered 22 % of the territory of Roraima (Silva 1966).

other animal products. Since the start on the construction of a road between Manaus and Boa Vista had been made, the territory had already begun to attract an increasing interest. In 1960, there were in Roraima in the midst of the tree and grass savannahs 837 *fazendas* with about 167 000 head of cattle. In 1970, there were already 235 000 head of cattle and the number of *fazendas* had increased to 1990. The cattle farmers sold the meat and hides mainly in and via Manaus.⁸

According to a number of experts, much wider possibilities existed for a spectacular expansion of livestock production in the tropical forest zone. Brücher believed that the Amazon Basin provided better opportunities for livestock farming than the Venezuelan and Colombian Llanos, provided modern methods were employed. In his view, livestock farming was a “Wirtschaftsform mit Zukunft” (economic activity with future) for the tropical rain forest, especially if the appropriate breeds of animal were kept (Brücher 1970, 217–225). He considered in this connection the poorer lands of the higher ground, which are not periodically flooded (*terra firme*), the most suited to animals for slaughter (including zebus), while the lower-lying, periodically flooded, *várzeas* would be better suited to the rearing of water buffaloes. These give higher milk yields than the zebus and are better adapted to the terrain of the *várzeas*.⁹

Brücher based his conclusions mainly on observations in the Amazon lowland of Colombia, where pastures had been laid down for cattle grazing at various places on the *terra firme* and good results had been achieved. In South-East Colombia and parts of East Peru cattle farming had even become the principal form of agricultural production.

According to Brücher, favourable factors in the Amazon regions were the fact that the pastures were of good quality at all seasons and the circumstance that water was constantly available at numerous places for the animals. In a region like the Llanos this was by no means always the case. Another positive feature was that the pastures remained productive for years without the application of fertiliser. In the practice of arable farming, by contrast, soil exhaustion already began to occur after a few years. Pastures which were laid down in Colombia in 1935 were still in good condition at the end of the 1960s.

A further reason for the success in the region studied by Brücher was the fact that the cattle population had been improved by the acquisition of zebus and the crossing of various cattle races. Cattle diseases were successfully checked by disinfecting the animals regularly in basins, as well as by eradicating harmful weeds from the pastures and preventing the formation of pools of stagnant water in the vicinity of the pastures (Brücher 1970, 220–222). These measures must be considered necessary pre-conditions for the practice of modern livestock farming.

The views of Brücher and others led to a fairly fundamental change in the ideas which had long existed concerning the possibilities of livestock farming in the humid tropical environment. Many people, including the geographers P. Gourou and H. Wilhelm, had long been pessimistic about livestock farming in such conditions. Apart from the occurrence of various harmful cattle diseases and the humid, hot climate,

8 *Opinião*, 20 a 27 de agosto de 1973, p. 4 (“A corrida para Roraima”).

9 Brücher pointed out in this connection that it would be desirable to retain a considerable portion of the forest in order to prevent unwanted disturbances to the natural environment. He did not support a one-sided economy, based entirely on livestock farming (Brücher 1970, 225–226).

this pessimism was based on the rapid exhaustion of the soils observed with the practice of arable farming (Gourou 1966, Chapter 6; Brücher 1970, 215 f.).

In Brazil, the Amazon region had long been avoided by the majority of livestock farmers. They preferred other parts of the vast country, not only because of the natural conditions, but also because of the poor accessibility of the Amazon Basin and the great distance to the consumer markets. Consequently, livestock farming remained of modest extent in the Brazilian North. Although livestock farming contributed 21.4 % of the regional income in 1966, there were only 2.03 million cattle there in 1968, which was 2.2 % of the national total (Pinto 1971, 17; *Amazônia. Estatísticas básicas* 1970, 112).

Livestock farming was restricted mainly to the *campos de várzea*, which become available during the dry season, and to the *campos* (savannahs), which occur at various places (including the Ilha de Marajó). The higher, forested *terra firme* lands were, until recently, mainly used when some of the animals had to be moved to safety from the *campos de várzea* during the rainy season. Pastures were generally not laid down there. The cattle farmers were content to utilise the open areas in the forest.¹⁰

The demand for meat and other animal products would increase still further in later years (Ramalho 1971, 41). The new views about the use potential of the selva region therefore meant for Brazil that it would be able to develop into a very important meat producer and into one of the greatest meat exporters. In the late 1960s and early 1970s people in Brazil became increasingly conscious of these possibilities. By 1970, they had already realised that export via Peru (Lima) and the ports on the Caribbean coast would greatly increase the market potential, and that export through the east coast ports also had the advantage of a relatively favourable location. Calculated in sailing time, the grazing areas south of Belém were situated five days closer to the European markets than the abattoirs of the Argentinian ports were (Foland 1971, 73).

For the time being, Brazilians were still thinking in terms of rather traditional and, in any event, extensive forms of livestock farming in the most favourably located areas. If they were to change to a more intensive form of farming, however, with regular applications of fertiliser and the growing of special fodder crops, if they were to build an extensive network of cold stores and to use refrigerated lorries for meat transport, production could be increased many times.

The possibilities for the establishment of small arable enterprises

Besides the possibilities for livestock farming, the Amazon region also offered possibilities for establishing small and medium-sized arable holdings for the benefit of arable farmers from other parts of Brazil, with the aim of reducing the rural problems of those regions and absorbing their population increase. This would particularly benefit North-East Brazil, where the situation in the countryside gave the most cause for concern.

Although the SUDENE (Superintendência do Desenvolvimento do Nordeste) had tried to relieve the many economic and social problems of the North East by means of a series of different measures since 1959, the results of its development policy up to the early 1970s were modest. There still existed a great lack of good employment in the North East. The government had meanwhile begun to realise that industrialisa-

10 Described in detail in Wilhelmy (1966).

tion, which had been greatly propagated in the 1960s, had not sufficiently increased the number of jobs and that the attraction of industry would also provide insufficient relief in the future (Kleinpenning 1971a, 279 ff.).

Analyses by the SUDENE from that time showed that, after the execution of the proposed irrigation projects, land reform, colonisation and other agricultural development measures in the North East, there would remain a surplus of about 309 000 families in the primary sector. Since it would probably prove impossible to realise completely all the proposed measures in the short term, it had to be assumed that the surplus would, in fact, be larger. A considerable proportion of the 1.3 million rural families for whom there was insufficient work in the North East would therefore have to look for a living outside the agricultural sector or in other parts of the country.

The Instituto de Planejamento Econômico e Social (IPEA) considered that the most adequate contribution towards the solution of the population problems of the North East would be a considerable expansion of the supervised colonisation of the Amazon Basin, where there was land for millions of farmers (Tavares *et al.* 1972, 122-124). One of the important aims of the then government, therefore, was to push forward the agricultural front in the Amazon Basin in order to integrate the North and to reduce the socio-economic problems of the North East (*Metas e bases para a ação do governo* 1971, 31). The more varied picture of the nature of the soil that had been gained in the preceding years had undoubtedly affected thinking in this field. The North proved to possess not exclusively poor soils, as was previously assumed, but also areas with considerably better land.

Moreover, colonisation was an attractive solution from the financial point of view, for the IPEA had come to the conclusion that supervised colonisation was one of the cheapest means of creating large numbers of jobs in a short time.

The average placement costs in ten Brazilian colonisation projects (which had been realised or were still to be realised) amounted to US\$ 2547 per family (1971 Dollars). In most instances the amount lay around US\$ 2000 (Tavares *et al.* 1972, 114). Panagides put the costs associated with the creation of one job by means of colonisation at between US\$ 1132 and 1944, a sum based on calculations by the IPEA, the United Nations Food and Agricultural Organisation (FAO) and the International Bank for Reconstruction and Development. These were only direct costs and so excluded expenditure on infrastructure (roads) and administration (Panagides and Vande Lage 1973, 21 f.).

According to W. Cline, the costs of creating one job in North East Brazil by means of irrigation schemes amounted, by contrast, to US\$ 6768. Patrick even came to a higher estimation: he calculated that the costs of creating one job through the capital-intensive projects furthered and approved by the regional development bodies (SUDAM and SUDENE) reached as much as US\$ 32 597 and 16 915, respectively. Lastly, various calculations put the cost of increasing employment in North East Brazil by means of land reform at between US\$ 800 and 1844 per job.¹¹

The IPEA also concluded on the basis of research in various regions of Brazil that colonists, at least if they received government support, could earn incomes above the minimum wage. Another conclusion reached by the IPEA was that colonisation was an activity which was decidedly justified for the government on financial and economic grounds, since most colonists were able to repay the costs and the interest within a

11 All figures come from Panagides and Vande Lage (1973, 21 f.).

period of 15 years (Tavares *et al.* 1972, 114 f.). These findings will also have been a reason for the IPEA to regard colonisation as an adequate solution.

During the first half of 1970 the North East was struck by severe droughts, followed in certain areas by floods. The weakness of the economy of the North East and the inability of large groups of the population to withstand the consequences of catastrophe were demonstrated even more clearly than they had been in the 1960s. In the view of many people, the events showed once again that the development policy of the preceding decade, pursued by the SUDENE and aimed mainly at industrialisation, had failed.

These events did not induce the Brazilian government to carry out a thorough reform of the agricultural structure. Instead it announced in June 1970 an ambitious programme of national integration (Programa de Integração Nacional). Amazônia would be opened up by means of a few great highways (connecting with those in the neighbouring countries) and guided colonisation projects would provide no less than 100 000 families (if not more) with their own agricultural holdings within five years (and as many as 1 million within ten years). It was believed that this would considerably relieve the problems of the North Eastern countryside.

Concluding remarks

The foregoing makes clear that the integration policy cannot be understood if the economic motives are not taken into account.

Since 1964, economic growth had been one of the major objectives of Brazilian government policy. Because of the limited capacity of the home market, however, the phase of import substitution proved largely to have lost its dynamic at the beginning of the 1960s and it consequently became necessary to develop new strategies in order not to endanger the country's further economic growth and to increase the gross national product. In the late 1960s and early 1970s, the Brazilian government came to regard the development of the Amazon Basin through generous investments increasingly as one of the more attractive means, since the "North" possessed characteristics which made possible a considerable expansion of mining, livestock farming and forestry (Rosenbaum and Tyler 1971, 420). It was mainly these sectors that would be able to make an important contribution to a further growth of the economy of the North (Panagides and Vande Lage 1973, 2). In addition, there were possibilities for extensive colonisation on the basis of family holdings. The circumstances were also by no means unfavourable for an intensification of the fishing industry, the expansion of certain branches of industry and of tourism. Apart from an expansion of production for the home market, the stimulation of these branches of the economy might also lead to a considerable growth of exports, especially since the Amazon region was favourably located relative to the world's major areas of consumption. In view of the demand of various foodstuffs and mineral raw materials, the prospects for this export orientation were very good.

By the late 1960s Brazilians were thinking more positively about the potentialities of Amazônia than a few decades earlier, when much less was known about its natural wealth, when the international markets for raw materials could still be plentifully supplied by regions with more favourable conditions of production, and when the Brazilian population was still much smaller. They were no longer so ready to characterise the region as a "green hell." On the contrary, an atmosphere of optimism clearly prevailed in relation to the Amazon region and, as is often the case in such situations, there was

now a tendency greatly to minimise, if not completely forget, the negative aspects of the region, such as the permanently hot and humid climate and the poverty of most of the soils.

Nationalistic and political motives

Growth might naturally also result if investments were to be made elsewhere in the country. It might even be possible to achieve a still greater economic growth, since the more developed parts of Brazil enjoyed more favourable conditions in a number of respects. The government preferred, however, to include the Amazon Basin in its economic growth strategy. In order to understand this, we should realise that it was not guided exclusively by purely economic motives, but also by other motives, including nationalistic and political ones.

National security, imperialistic motives

We may begin by pointing to the fact that the North has a land frontier of about 11 000 kilometres and that, in the opinion of some Brazilians, this frontier was still inadequately safeguarded. There was little or no settlement along this extensive frontier.

Now that – in the 1960s – population pressure was increasing in the Andean countries and these countries wished to devote more attention to the opening up and colonisation of their eastern lowlands, an increasing migration from the Pacific coast region and the Andes highlands to the western Amazon Basin was by no means unlikely, especially if oil should be discovered in a number of places. In Brazil it was considered not impossible that this colonisation could lead to infiltrations, deliberate or otherwise, on to Brazilian territory, which would then form a pretext for neighbouring countries to make territorial claims. Tambs accordingly regarded the road building projects in Brazil in the late 1960s and early 1970s as a reaction to the plans to construct a Carretera Marginal de la Selva east of the Andes – plans of which, incidentally, but had been little realised in the early 1970s (Tambs 1973, 51 f.).

Instead of losing parts of the Amazon Basin to its neighbours, Brazil was obviously much more interested, according to Tambs, in strengthening its sphere of influence in the neighbouring regions, especially since oil had already been discovered there in several places, while Brazil was still searching for it in vain in the Amazon region.¹²

These interests incidentally did not exist in a vacuum, but formed part of the redoubled efforts Brazil had made since 1964 to create an important sphere of influence for itself in the whole of Latin America. It had realised in this connection, that the Amazon Basin could fulfil an important communications function, both through the presence of navigable rivers and through its location within South America, and that an improved opening-up of the region would therefore only facilitate the realisation of its aspirations for hegemony.¹³

12 Tambs did not consider it unlikely that Brazil would try to infiltrate into the bordering regions in order to be able to claim these areas after a passage of time. He referred in this connection to the events leading to the annexation of Acre at the beginning of last century (Tambs 1973, 46).

13 Tambs discussed this communications function in detail in *Geopolitics of the Amazon* (1973).

For the same reason, Brazil also strived to link the roads being constructed in the Amazon Basin as rapidly as possible with those in the neighbouring countries. Brazil was even prepared to finance wholly or partly the missing road sections in the neighbouring countries and made an offer to some of them to do this. Use was actually made of this offer in the construction of a road across Guyana.

As a result of a decree by the presidents of Brazil and Venezuela, the former country would also obtain a connection with the Venezuelan coast. Ultimately a completely asphalted link was even to be constructed between Brasília and Caracas. Provision was further made for a connection of the Brazilian road network with the road from Pucallpa to Lima (Peru), while a link was also planned with La Paz (van der Putten 1973).¹⁴

Purely economic motives also played a part in all this, since the road network could also be used in the future for the export trade, making possible a better conquest of foreign markets, including those of Central America.

Apart from a degree of concern for the possible consequences of a thrusting colonisation front in the eastern part of the Andean countries, there arose some mistrust of various countries outside Latin America in around 1970.

Some Brazilians did not consider it unlikely that Brazil would be put under pressure in the future through international organisations, such as the United Nations, or more directly, to open up the last great, still largely uninhabited area on earth suited for human occupation to immigration from densely populated countries, such as India and Pakistan, where part of the population was living on the verge of starvation. This immigration potential was raised by the Indian sociologist and demographer, S. Chandrasekhar, among others (Reis 1971, 13 f.).

As far as the developed West was concerned, there was fear of an increasing interest in the natural resources now that various sources of raw materials were becoming exhausted. It had also already been remarked that the Amazon Basin could be of interest because it contained vast quantities of fresh water, or could become the location of environment-polluting industries from Europe and North America.

The influence which foreign countries would be able to gain from the exploitation of the region might even enable them to obtain complete control of the Amazon Basin, aided by certain groups of Brazilians. It was pointed out in this connection that the United States, in particular, possessed great economic and political power and were located close to South America. This country, especially therefore, was regarded as the most "dangerous" (Rosenbaum and Tyler 1971, 427 f.).

In the late 1960s, many Brazilians saw in the plans of the Hudson Institute a very real threat of control over the Amazon region.

In 1966, the Brazilian engineer, Eudes Prades Lopes, launched the idea of constructing a dam in the Amazon near Obidos, which would make possible the generation of 70 million kilowatts of electricity per annum. His plan was passed by the Ministério de Planejamento to the North American Hudson Institute, which studied it and elaborated it further, but in doing so, completely adapted it, in the view of many Brazilians, to North American interests. The possibilities for the production of cheap energy were ignored. Of much greater interest was considered the fact that, by ponding up the river at Obidos or Monte Alegre, a very large part of the Amazon region would be submerged,

14 According to Morais *et al.* only 135 kilometres of the road from Pucallpa to Lima were still missing in around 1970 (1970, 45).

creating an area of water comparable with the Great Lakes of North America. The shipping facilities so created would make possible a cheap and large-scale exploitation of the minerals and forests.

There was immediately fierce opposition to these plans and the director of the Hudson Institute, Dr. H. Kahn, was more than once personally denounced. People were afraid, perhaps not without reason that, with the realisation of these plans, the Amazon region would soon fall completely under foreign influence, particularly that of North America. It was also realised that the creation of the lake would lead to the loss of large quantities of timber and ores. The plan was explained as an attempt to keep Brazil underdeveloped and was characterised by Valverde (1971b) as being purely neocolonialistic.

It was therefore decisively rejected by, among others, the Comissão Nacional de Defesa e pelo Desenvolvimento da Amazônia (CNDDA), a group of patriotic Brazilians who opposed excessive foreign influence and strove to achieve a nationalistic integration and development of the Brazilian North (Valverde 1971b, 5–10). The Brazilian government clearly stated that the Amazon region would never be given up and that efforts must be made to integrate it as rapidly as possible with the rest of the country. It declared that it regarded the integration of the North as a task that must be carried out by Brazil with the means which the country considered to be the most appropriate.

The slogan of those carrying out the *Rondon Project* (see p. 53–53), “Integrar para não entregar” (integrate it in order not to lose it), expressed very concisely the wish of a great many Brazilians.

The threat to the region from foreign countries was incidentally a danger which aroused the vigilance particularly of the military. The military elite therefore also became the most passionate defenders of the integration and development of Amazônia and regarded this task as a matter of high priority. It was by no means impossible that, in earlier years, they had deliberately drawn the attention to various possible threats and tried to exaggerate their seriousness. In any event, some soldiers seized upon the border disputes between Venezuela and Guyana as an indication of the danger facing Brazil. Venezuela might be able to gain control of part of the Brazilian North (Rosenbaum and Tyler 1971, 425). Lastly, the military also condemned the plans of the Hudson Institute as a threat to national security and perhaps deliberately did so with greater vehemence than was necessary (Valverde 1971b, 10).

The desire to maintain and strengthen their own position undoubtedly played a part in the adoption of a stance by the military elite. Development of the Amazon region meant the possibility of the employment of troops in the pacification of Indigenous tribes, in the maintenance of order and in transport. Military engineers could also have an important share in road construction (Rosenbaum and Tyler 1971, 421).¹⁵ Taking this into account, it is not improbable that the decision of President Medici to pursue more energetically the development of the Amazon region and to give a high priority particularly to the opening up of the region, was made under some pressure from certain military groups. Tyler and Rosenbaum pointed in this connection to the demands and criticism of General Albuquerque du Lima. He was once regarded as a

15 In 1973, five army battalions were stationed at Santarém, Cuiabá, Cruzeiro do Sul, Boa Vista and Porto Velho. For the activities of these army units, see p. 55–58.

possible threat to Medici's authority and the wind had to be taken out of his sails as quickly as possible (Rosenbaum and Tyler 1971, 426).

Population growth and the efforts to achieve integration of the North

One way of realising the economic integration and securing of the Amazon region against foreign occupation was through extensive colonisation. For this, manpower was needed, as indeed it was for various other development activities. The cheaper such manpower is, the better and, consequently, the great population growth was regarded by many Brazilians as not unfavourable. It would enable Brazil all the better to populate and exploit the still vast and scarcely inhabited interior relatively rapidly.

These Brazilians, therefore, did not wish to acknowledge the problem of rapid population growth and the need to restrain it. They pointed to the low average population density and to the enormous potential the country still possessed, thereby ignoring the fact that it was not only the existence of possibilities for expansion which were important, but also the pace at which an expansion could be achieved. Nor did these opponents of a population policy wish to recognise that rapid population growth was disadvantageous to rapid economic development and social progress.

Among the opponents was the Associação Médica do Estado da Guanabara. In the 1970s, this association opposed both the family planning activities of foreign missionaries working in the Amazon region and the Bemfam association.¹⁶ Apart from pointing to the still low average population density in Brazil, the secretary of the medical society, Dr. Mário Victor de Assis Pacheco, pointed to the fact that it was precisely the "population explosion" which had enabled the country to achieve great things in the past, such as the building of Brasília and the construction of the Belém–Brasília highway. His thesis was that accumulated labour was the equivalent of capital and that, in view of the scarcity of the latter, Brazil must strive to obtain as much as possible from the former. Economic progress would benefit in consequence. He concluded that the people who were interested in family planning wanted to keep Brazil underdeveloped, so that it could be more easily exploited and the Amazon region be brought more easily under non-Brazilian influence (Pacheco 1972a, 82 f.).

Lastly, the same medical association even decided, during its first conference in 1972, again to condemn contraception strongly and to defend population growth on the grounds that it formed the basis for "ocupação e conquista do território brasileiro, fator indiscutível de desenvolvimento econômico, a exemplo do que ocorreu em todos os países desenvolvidos do mundo" ("occupation and conquest of the Brazilian territory, necessary, without discussion, for economic development, as has occurred in all developed countries of the world") (Pacheco 1972b, 107; author's translation).

One may ask whether such pronouncements, based on disputable arguments, were not largely inspired by self-interest, since the rate at which the population grew determined in part the prospects of a livelihood for doctors. In any event, the association did not forget its own interests, since the same resolution which condemned contraception also made a plea for better working conditions (Pacheco 1972b, 106).

Incidentally, it was not only certain groups of doctors who opposed a restriction of population growth. The Comissão Nacional de Defesa e pelo Desenvolvimento da

16 See particularly the publications of Mário Victor de Assis Pacheco.

Amazônia also rejected such a policy, while the Escola Superior de Guerra, the “brains trust” of the military elite, which largely determined the Brazilian development strategy, expressed its disquiet about an increasing use of contraceptives in 1972 (Pacheco 1972b, 108). The Brazilian government itself also several times plainly declared that the population growth did not need to be checked. The opening up of the Amazon region offered the possibility of avoiding the delicate question of population growth and also the chance to profit from that growth. It suited the Brazilian government very well, in fact, that a considerable increase was occurring at various places in the Amazon region. It was therefore noted with some satisfaction in certain official publications dealing with colonisation in the Amazon Basin that, in Altamira and district alone, 1000 new Brazilians were born in a single year and that a further 800 births were expected in the following months (Ministério da Agricultura n. d., *Desenvolvimento rural*, 11).

A much more realistic view of the demographic problems was taken by Roberto de Oliveira Campos, among others, who pointed out that one in every three or four children died during the first years of infancy in the North East in the early 1970s. He also pointed out that 4000 abortions were occurring in Brazil every day at the time (Morais *et al.* 1970, 127). His views and the views of those who thought like him found no official support, however.

Prestige and popularity considerations

Considerations of prestige also played a part in the efforts to integrate the Amazon region. Paulo Machado stated that the development of the North may be regarded as a “necessity of the Brazilian people” and he explained this as follows:

When examining history, one notes that every nation has had a necessity for a great achievement in order to affirm itself as a nation. Many have found in war the heroic moment for their national union. Brazil, traditionally a peaceful country without any reason to engage in war, has found in the integration of the Amazon a great national achievement which has been able to attract the attention and preoccupation of every Brazilian. The conquest of the Amazon is, to a degree, a type of war fought within our own frontiers, where a bloodless war goes on in which the enemy is poverty, ignorance and disease (Machado 1973, 1–2).

Moreover, according to Machado, the integration of the Amazon Basin formed a unique opportunity for many Brazilians to escape from the strongly regimented and institutionalised life of the great cities and the more developed regions of the country. In the Amazon region one could show initiative as a pioneer, be creative, discover new sources of livelihood and enjoy more freedom. The development of the region formed a challenge and an adventure. Other people than Machado also believed that Brazil could prove, through the integration of the Amazon region, that it was not an insignificant nation but a country that was able to carry out difficult tasks successfully. Machado concluded: “All this explains the prompt and passionate adherence of Brazilians to the effort that the Government is making in the development of the Amazon” (Machado 1973, 1–2).

With regard to the latter statement, it may be remarked that one can speak only in part of spontaneity. In the early 1970s, the government systematically tried to convince

the Brazilians that the opening up and development of the Amazon Basin formed one of the most important tasks for the Brazilian nation and that the whole country could benefit. They deliberately appealed to the feelings of national pride and exploited the characteristic of many Brazilians of feeling attracted by spectacular achievements. The opening up of the Amazon Basin was obviously such an achievement. Roberto de Oliveira Campos even characterised the striving for national integration through the opening up and colonisation of the Amazon region as something that had “apêlo mágico” (“a magic appeal”) for broad layers of the Brazilian population and as a heroic solution for an “antiga tristeza” (i.e. the problems of the North East) (Morais *et al.* 1970, 112–131).

It was obviously of great importance to the government that the majority of Brazilians should show some enthusiasm, since this could only facilitate the realisation of the integration of the North. Moreover, the interest in the Amazon region could more or less convince the people that the development of the country was being tackled vigorously, and it could also divert the attention from other, less favourable aspects of government policy, such as lack of political freedom, torture, the continued existence of social abuses and the absence of radical land reform. The elite and the masses could be drawn closer together by a common ideal, thereby reducing the internal political and social tensions. The opening up and development of the Amazon region would therefore contribute not only to territorial and economic integration, but also to political integration, i. e. to that of the elite and the masses.

Tyler and Rosenbaum once expressed it as follows: “Once again a symbol of Brazilian grandeur has been created with which nearly the entire nation can identify” (Rosenbaum and Tyler 1971, 417).

The more successes the government had, the greater its popularity and the weaker the opposition. In other words, the stronger would be the position of the regime. According to Roberto de Oliveira Campos, the revolutionary movement of 1964 badly needed such a strengthening of its position in the late 1960s (Morais *et al.* 1970, 131).

Lastly, there was yet another motive that can be mentioned as underlying the Brazilian government’s Amazon policy. This was the wish to obtain not only temporary popularity, but also lasting fame. Just as Kubitschek ensured that his name would live on through the building of Brasília, so may President Medici have hoped that he would become famous in posterity through his bold plans for the Amazon region. His spectacular road building programme, in particular, may have been partly grounded on this motive.

Concluding remarks

In setting out at the end of this chapter the various motives underlying *Operação Amazônia* and trying to draw up a balance, we may first of all remark that the fear that has been several times expressed of the loss of the Amazon region appears exaggerated. The more intensive occupation of the eastern Andes lowlands was in fact taking place slowly before the 1970s. There was certainly no question of a serious and acute threat from the west, nor from the north (Venezuela). Nor did this need to be the case in the following years. The danger that claims would be made on the region for colonisation by countries of the Third World should equally not be overestimated, since there

were numerous practical objections to large-scale migration and colonisation. Even if these were indeed to occur, they certainly did not need to mean the end of Brazil's political control over the region. Brazil had succeeded in the past in integrating large numbers of immigrants into the resident population and would be able to do so again. With regard to the idea of colonisation by people from abroad, it should also be realized that large-scale occupation could lead to all kinds of unfavourable effects on the natural environment and that people in other countries were perhaps more afraid of a disturbance to the precarious ecological balance from large-scale clearings than the Brazilians.

We also consider that the danger of a possible economic subjection to the wealthy West was exaggerated, because there were several ways open to Brazil to avoid or limit this, at least if the country wished to do so. Moreover, such an argument lacked credibility as long as the frontiers were kept wide open to foreign investors.

One of the major objectives of the regime that was in power from 1964 was development, particularly in the sense of economic growth, including among its aims that of giving Brazil a more important place within Latin America and in the world as a whole. It seems to us, therefore, that the efforts to integrate the Amazon region must be viewed especially in this light. The government regarded the opening up and development of the North as an important means of accelerating economic growth. This policy obviously needed as far as possible to have the support and sympathy of a large part of the Brazilian population. In order to ensure this, the danger of a threat to, and a possible loss, of the region could naturally be used as one of the reasons.

For the military elite, national security and the preservation of sovereignty over the North was certainly an important motive, but it seems to us that its position was also primarily determined by the motive of economic growth. It clearly and repeatedly showed itself to be a supporter of a policy aimed at economic growth and, from the Escola Superior de Guerra, it exercised a strong influence on the strategy of the government, which was trying to realise that growth.

The fact that the military elite propagated particularly the development of the Amazon region to achieve this end may be attributed to the circumstance that the integration of this region, in addition to its economic growth potential, offered wide opportunities to increase the popularity and power of the military elite and the regime it supported. In the view of the then rulers, therefore, the integration of the North could make an important contribution to political stability. The latter could naturally also be achieved through a vigorous approach to the problem of the North East, but it would be much more difficult to achieve significant results there in the short term.

Lastly, there remains the question of to what extent social motives were important. Was the integration of the North also used as a means to reduce significantly the social problems of the North East? It is difficult to give a reasoned answer to this question at this point. In order to be able to judge to what extent the government was attempting to reduce social problems, the nature and the effect of certain development measures will first have to be analysed and attention will have to be paid to the colonisation process which was begun in the early 1970s. We shall be doing this in the next part of our study and will therefore be returning to this question in our concluding chapter. In anticipation of the latter, we may already remark that the "social" motives appear to be subsidiary to the economic and political ones.

