

## Some development measures of the 1970s

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Having reviewed in the last chapter the motives underlying the efforts to develop the Amazon region, in this chapter we shall be concerned mainly with certain measures that were taken in the 1970s to realise these efforts.

### The establishment of SUDAM

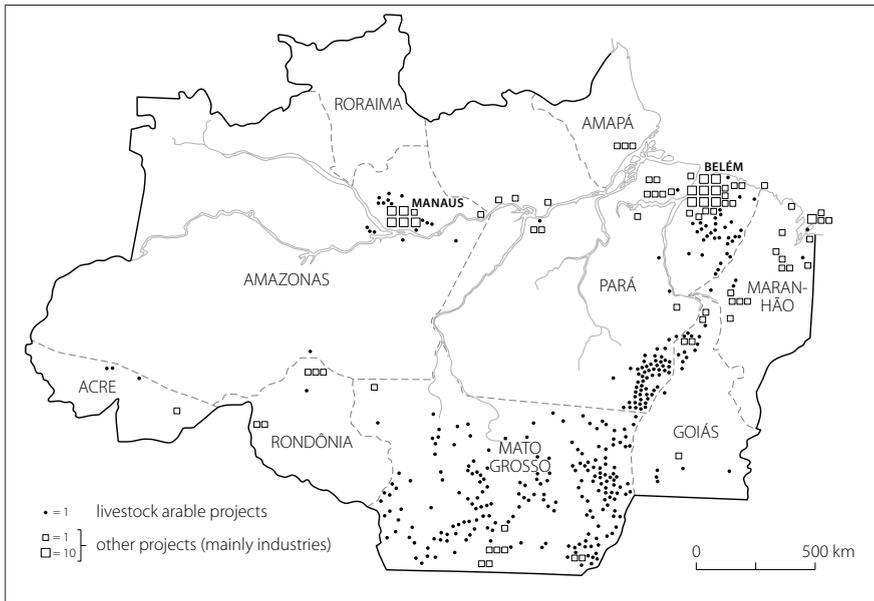
As far as the activities of the federal government are concerned, we may mention first the establishment in November 1966 of a completely new development body: the Superintendência do Desenvolvimento da Amazônia (SUDAM).<sup>17</sup> The task of this body was to foster progress within its area of jurisdiction by such means as carrying out or initiating surveys and other investigations, drawing up plans, carrying out or initiating projects, encouraging private investment and coordinating the development activities of the separate states and territories. For this purpose, the SUDAM drew up a series of detailed plans covering a number of years, containing specific projects to encourage the various sectors of the economy, tourism, the infrastructure, the health services, education etc. The SUDAM was, in fact, a regional planning institution with the task of furthering as far as possible on all fronts the progress of the Amazon region (Kleinpenning 1972, 2 f.).

In so doing, its area of activity was not restricted to those regions traditionally regarded as belonging to the “North.” It also extended as far as Mato Grosso north of the 16<sup>th</sup> parallel, Goiás north of the 13<sup>th</sup> parallel and to the part of the state of Maranhão west of the 44<sup>th</sup> meridian. This area is referred to as Amazônia Legal (see Fig. 1). It covered an area of 5,057,490 square kilometres, which is no less than 59% of the total area of Brazil, while less than 8% (6.94 million) of the country’s population were resident there in 1968 (Silva 1966, 1).

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17 The SUDAM replaced the Superintendência do Plano de Valorização Econômica da Amazônia, which had been established in 1953. The task of the latter service was to spend in a suitable manner the 3% of the federal state income set aside annually under a constitutional provision of 1946 for the progress of the Amazon region, as well as other funds. The SPVEA never became more than a bureaucratic organ of government, which did not succeed in coordinating very much and which lacked the experts able to draw up and realise good investment plans. It also spread the investments too thinly. The organ achieved little during the thirteen years of its existence (Valverde 1971b, 3; Panagides and Vande Lage 1973, 9).

Figure 4. Priority areas and SUDAM-projects in Amazônia Legal (1972)



Source: Kleinpenning (1975) (author's own elaboration).

Orlando Valverde observed that such a large land area had never been entrusted to a development body before (Valverde 1971b, 2). The encouragement of the progress of such a vast region in fact formed an extremely onerous task for the SUDAM. It is not surprising, therefore, that this body wished to concentrate the government investments and the activities it was undertaking within the framework of its development plans largely in particular areas, the *areas prioritárias*. These were the more developed and densely populated regions. The priority areas covered 27% of the area affected by the development plan, but contained 85% of the population. 88% of the livestock were to be found there. They accounted for most of the agricultural production and already contained the greater part of the infrastructure (see Fig. 4) (Lopes 1973, 43).

## Financial incentives

Much attention was paid to the encouragement of private investment and it is in this field that the SUDAM had its most remarkable successes.

The investments in question were encouraged particularly by a series of fiscal measures devised earlier for the North East, but made fully applicable to Amazônia Legal in 1966 with the help of a number of amendments. By far the most important of the various *incentivos fiscais* was that natural persons and enterprises registered in Brazil could deposit 50% of the money they owed in taxes with the Banco da Amazônia, which had functioned since 1967 as the official development bank for Amazônia Legal. This money could then be used for the financing of projects in the fields of arable and livestock farming, industry, infrastructure, health care, education or tourism, provid-

ed this was done within a stated time and the projects had been approved by the SUDAM. The investments could be made in newly established enterprises, but also used for the modernisation and expansion of existing enterprises.

Another provision, which partly compensated for the effect of unfavourable locational factors, gave firms established before 31<sup>st</sup> of December 1974 partial or total exemption from income tax for ten years. They could also claim exemption from import duties levied on machines and other requisites needed for the realisation of projects within the area under the jurisdiction of SUDAM. Lastly, they could also obtain exemption from duty on the export of certain products from the area (SUDAM/Banco da Amazônia 1972, 15; Panagides and Vande Lage 1973, 10). Besides the federal government, the states and municipalities also granted special facilities. The authorities also tried to make the establishment of new enterprises more attractive by the provision of infrastructure, mainly in the larger municipalities.

All these measures greatly encouraged the setting aside of taxation funds and gave rise to an increase in investments with non-tax money through the requirement that at least 25 % of the capital needed for the realisation of a project must come from other sources.

Up to June 1976, the SUDAM had approved a total of 528 projects for the establishment or modernisation of enterprises. The total investment involved was 14.571 billion cruzeiros, of which more than 51 % was “fiscal” money.<sup>18</sup> The Amazon region became at that time one of the areas where considerable investments were made. The most important task of the SUDAM was to encourage these investments and to control and canalise them.

A high proportion of the money came from the more developed South East. In 1970 nearly 81 % of the applications to take advantage of the *incentivos fiscais* came from the states of São Paulo, Guanabara, Rio Grande do Sul, Paraná and Minas Gerais. 58.4 % of the money involved in these applications came from the state of São Paulo and 13.9 % from the state of Guanabara. The total for the five states combined was 87.4 % (Miranda 1973, 7). Part of the money came from enterprises in foreign ownership, but it is difficult to discover the exact proportion.

The majority of the 528 projects approved until mid-1976 related to the agricultural sector (335); the second field of investments was industry, with 171 projects. Only 22 projects (which were intended to create a total of 8740 direct jobs) had been approved for *serviços básicos* and infrastructure. Up to the mid-1970s only a part of all these projects had been realised. Many still existed only on paper or were still in their initial phase. The industrial and agricultural projects will be discussed in the next chapter.

## The establishment of a free trade zone

The federal government also tried to encourage the economic progress of North Brazil through the establishment, in February 1967, of a free trade zone for a period of 30 years. Initially the zone was restricted to the city of Manaus but, by 1968, it had already been extended to include the immediate vicinity, so that it eventually comprised almost the whole of the municipality and covered an area of about 10 000 square kilometres

18 Data supplied by the SUDAM (personal communication in 1976).

(SUDAM/Banco da Amazônia 1972, 39). Raw materials and the majority of industrial products could be imported into the zone from abroad without the payment of import duty.<sup>19</sup> Thus the facilities related both to articles intended for immediate consumption and to those used in industrial processing. Unrestricted export was also permitted. In addition, factory products were exempted from the tax on industrial goods.

The aim of these far-reaching fiscal facilities was to reduce various unfavourable locational factors, particularly in the industrial field, that would eventually arise in the heart of the Amazon region (*Boletim Informativo* 1971, 1).

The effects of the free trade measures will be evaluated in the next chapter.

## The Rondon project

It was not only the government and business which began to show an increasing interest in the Amazon region in the late 1960s; there had also been a greatly increased interest since 1967 from university circles.

At the University of Guanabara the idea arose of involving the university more in the problems of the country's development. The plan gained the sympathy of many other institutions of tertiary education and of the government, which decided to encourage the participation of the students. This led to the emergence of the Rondon project, an assistance and development programme in which many institutions of higher education cooperated. From 1968 this project was under the direct responsibility of the Ministry of Home Affairs, which acted as the coordinating body. Up to March 1973 a total of over 34 000 students were reported to have cooperated in the project (Soares *et al.* 1973, I and II). This meant in practice that, during their vacations, students voluntarily spent 30–40 days elsewhere in Brazil in order to let their knowledge be used for improving the local living conditions. The Rondon project covered all the less developed parts of Brazil, but the North received the most attention up to 1973.

In order to ensure the realisation of the programmes and to guarantee greater continuity in the granting of assistance, a number of *campus avançados* were established. These were outposts where students and teachers could stay. There were already 14 of them in the Amazon region in June 1973 (*Boletim Informativo* 476, 28 June 1973).

The activities, an increasing number of which were carried out from these "campi," were mainly in the field of health, education, agriculture and livestock farming. They consisted both of direct assistance (e.g. medical help), and of research and other activities, such as resource surveys and assistance in cadastral work. The necessary programmes were drawn up by the institutions of higher education, in collaboration and consultation with the official bodies. They were carried out under the supervision of teachers. In some instances, the army gave assistance, such as providing transport or conveying food.

In addition to direct results on the spot, the Rondon project had the advantage of giving the students practical experience and of making them not only more professionally skilled, but also more aware of the many problems arising from the development of their country. The latter was certainly not the least important aspect. The confrontation with specific problems might lead to a change of mentality and to a greater social consciousness among those who would be in charge of affairs in the following

19 Weapons, ammunition, perfumes, tobacco, alcoholic drinks, and private motor cars were excepted.

decades. The attractive aspect of the Rondon project for the government was that it enabled it to harness an important category of the Brazilian people in the carrying out of its integration policy and fill them with enthusiasm for that policy. The project also meant that the government could give help cheaply to those areas where there had been less progress and there was a serious shortage of qualified manpower.

The government incidentally hoped, by means of the Rondon operations, to stimulate greater interest in working in the less developed interior territories of Brazil. The operations might lead to *interiorização da mão de obra*. Since 1972 this *interiorização* was one of the official objectives of the Rondon project. It formed a new activity, which was separate from the original programme, but had more or less originated from it, since it appeared clearly from the realisation of the assistance programmes that the lack of specialists was seriously jeopardising the continuity of the development process. At the same time, it was realised that this qualified manpower might be found among the young graduates who had become acquainted through one or more Rondon operations with the less developed parts of their country. Those in charge of the Rondon project had made it their aim for 1973 to persuade 150 specialists to work in the Brazilian interior (Soares *et al.* 1973, III, 3).

## Increasing research activities

Universities and colleges were also involved in the development of the Amazon region through research programmes.

In 1972, Brazil began the realisation of the Programa dos Trópicos Úmidos, an extensive multi-disciplinary, mainly scientific, research programme, for which funds were made available within the context of the Programa de Integração Nacional (National Integration Programme, see p. 78) (Machado 1973, 13). These funds were used *inter alia* to finance soil investigations along the newly constructed roads.

The University of Mato Grosso, in particular, played an important part in the research programme, in collaboration with other bodies, such as the Instituto Nacional de Pesquisas da Amazônia at Manaus.

In order to assist the realisation of various parts of the programme, a start was made on the construction of the Cidade Laboratório Humboldt in Aripuanã, one of the most isolated municipalities of north-west Mato Grosso. In the first instance, about 1000 people were expected to come and live there in the heart of the tropical jungle, where they would carry out research not only in laboratories and experimental plots, but also in the jungle itself (Machado 1973, 14). The location was chosen so that various Indigenous tribes would also be accessible as a subject of research.<sup>20</sup> During a period of two years investments were made in the municipality of Aripuanã to the value of 40 million cruzeiros, mainly for the provision of infrastructure (*Boletim Informativo* 499, 18 September 1973).

According to Machado, all these developments stemmed from the consideration that “only education and research can guarantee the perpetuity of the new surge of progress that exists today in the Amazon” (Machado 1973, 20). Although much re-

20 The University of Mato Grosso was also to build a hospital in Utiriti, where Indigenous people could be treated, making allowance for their manners and customs (Machado 1973, 14–15).

search had been done in the Amazon Basin, nevertheless in many respects not enough was yet known about the region for development to be achieved in the correct manner.

Not only the universities, but also some research institutes began to do research on a much larger scale than before. We may refer here to the activities of the Instituto Nacional de Pesquisas da Amazônia (INPA) at Manaus, whose main interest was in the physical sciences, and to those of the Instituto Nacional de Pesquisas e Experimentação Agropecuaria do Norte (IPEAN) at Belém. The latter institute was concerned with soil and agricultural research. By 1975, it had already studied, *inter alia*, the agricultural potential of the soils along the Transamazônica and would also carry out soil surveys north of the Amazon, where work had begun on a second east-west link. The institute had a number of experimental plots in the Amazon region on which to carry out agricultural research.

Lastly, mention should be made of the research departments of the Banco da Amazônia and the SUDAM. The Bank carried out economic investigations with the aim of giving the government and investors the best possible advice. The field of research of the SUDAM was wider but here, too, the emphasis was placed strongly on research in the service of economic development. The *Núcleo de Altos Estudos Amazônicos* of the university of Pará, also undertook research projects.

### The extensive opening-up programme

In the late 1960s and early 1970s, attention was drawn to the Amazon region much more through the federal government’s spectacular road building programme than through the measures discussed above. As early as 1958 the central government had begun to make the Amazon region more accessible by means of a road link between Belém and Brasília. This 2100 kilometre road was completed in 1960. In 1965 a further important connection was completed: that between Brasília and Porto Velho (Rondônia), via Cuiabá, the capital of Mato Grosso (see Fig. 5).

Figure 5. Road and general reference map of North Brazil (situation in late 1978)



Source: Kleinpenning (1975) (author’s own elaboration).

Since then, the government has pressed on uninterruptedly with its policy for improving the infrastructure. Starting from the premise that there were many unnavigable rivers and that the waterways which were navigable were not assisting adequately the occupation of the region and were also making rapid communication impossible, it came to view the construction of more highways as an increasing necessity if the utilisation of the region was to be made easier. A start was therefore made on the construction of a road between Porto Velho and Rio Branco in the territory of Acre, as well as on the construction of a road from Porto Velho to Manaus. According to the original plans, these roads should have been completed at the end of 1970, but they were only finished a couple of years later. The road from Manaus to Porto Velho was asphalted at the beginning of 1974. This enabled one to drive from Porto Velho to Humaitá in three hours, while the boat trip previously took 25 hours.

Moreover, thanks to the activities of the army, a road link between Manaus and Boa Vista, in the territory of Roraima, was completed during the course of 1974. A continuation of this road to the frontier with Venezuela and Guyana was also completed.<sup>21</sup>

The most spectacular and, at the same time, unexpected road construction project dates from 1970 and was initiated by the Medici government, which regarded the improvement and expansion of the road network as one of the most effective means of fostering integration of the country. The project comprised the construction of two great highways through the heart of the Amazon region. They were financed mainly with funds made available through the Programa de Integração Nacional.

One road, about 1750 km long, ran from north to south and connected Cuiabá with Santarém, while the second road was planned to run from east to west south of the Amazon, linking Estreito, on the Rio Tocantins, with Humaitá, on the Rio Madeira. This second road has become known as the Transamazônica. It has a length of 2328 km and connects the principal population centres in the region south of the Amazon (Andrezza 1970, 18 ff.). Near Estreito the road connected with the Belém–Brasília highway and the road network of the North East. The latter was still in a very poor condition in various places in 1970, but it has been further improved since then (Morais *et al.* 1970, 1–25).

A start was made on the construction of the road from Cuiabá to Santarém, which did not connect directly with a single existing village, by units of the Brazilian army engineers, as early as the end of 1970. They worked outwards from Cuiabá and Santarém towards the army base of Cachimbo, in southern Pará. By October 1972, 690 km had been completed, mainly in the south. The whole road was planned to be finished in the course of 1974 (Ministério da Agricultura 1972a, 32).

The construction of the Transamazônica also began in September 1970, when four private companies started work on the 1254 km long section from Estreito to Itaituba. This portion of the road was completed in September 1972, when Brazil celebrated its 150<sup>th</sup> year of independence, and was officially opened to traffic. Regular services began to connect the larger centres.

The second, more westerly section of the Transamazônica, i.e. the 1074 km from Itaituba to Humaitá, was constructed by three private road building concerns.

21 The completion of this frontier link had already led to the import of Venezuelan industrial products into Boa Vista. The better accessibility had also resulted in an expansion of cattle farming, while farmers from the Northeast had begun to settle in the vicinity of the road (*Opinião*, 20 a 27 de agosto de 1973, pp. 4–5, “A Corrida para Roraima”).

This portion was officially opened to traffic in March 1974 (Wozniewicz 1973, 16 f.). The third portion of the east-west highway runs from Humaitá via Porto Velho and Rio Branco to the Peruvian frontier. It was built by the army and was virtually completed at the end of 1973.<sup>22</sup>

*Photo 1. Monument commemorating the fact that the Transamazônica reached Altamira<sup>23</sup>*



*Photo 2. Plaque unveiled when the Transamazônica reached Altamira*



22 Some publications included this section with the Transamazônica, while others did not.

23 All Photos in this part by Jan M. G. Kleinpenning.

*Photo 3. The Transamazônica just east of Altamira*



*Photo 4. The Transamazônica disturbed the normal drainage in several places*



The army was also active elsewhere in this part of the Amazon Basin. It was working, for example, on an alternative connection between Humaitá and Rio Branco via Lábrea and building a road from Ariquemes to Guajará-Mirim, primarily to facilitate the exploitation and transport of cassiterite (Wozniewicz 1973, 31).

Most of the roads were initially not asphalted, but metalled to make them usable at all seasons.<sup>24</sup> Use was naturally much less easy and also much less safe in the rainy season than in the dry season, although dust was a much greater nuisance during that part of the year. The width of the roads was about 8.5 metres, at least where they had not been eaten into by erosion. They were, therefore, normal two-lane roads. The small rivers and streams were crossed by wooden bridges, but the large rivers, such as the Xingu, had still to be crossed by ferries in the early 1970s.<sup>25</sup> Initially, there were almost no service facilities, such as petrol pumps, along the roads. These were still almost wholly concentrated in the larger centres. In spite of this "austerity," large sums were spent on the construction of the roads. The total cost of the highway from Estreito to Humaitá and the Peruvian frontier was estimated at 810 million cruzeiros (Wozniewicz 1973, 30–32).

A more recent road building project gave rise to less sensation, because many people regarded it as the logical continuation of the earlier activities, but this did not mean that it was less ambitious. It related to the construction of the Perimetral Norte. As appears from Figure 5, this road opened up the little known, little used and extremely thinly populated region north of the Amazon.<sup>26</sup>

The contract for the construction of the section from Macapá to São Gabriel de Cachoeira and the Colombian frontier was granted to six companies, five of which were also involved in the construction of the Transamazônica. The work began in August 1973. The costs of this 2586 km highway amounted to 884 million cruzeiros. The section running from Cucuí, on the Venezuelan frontier, via São Gabriel de Cachoeira to Cruzeiro do Sul is 1629 km long and was built by the army.

The total length from Macapá to Cruzeiro do Sul is 4215 km and the costs were estimated at 1100 million cruzeiros (*Boletim Informativo* 381, 10 November 1972). The completion of the whole road was planned for the end of 1977, which meant that the Perimetral Norte was also expected to be built at a fast rate. Following this, a further highway was planned to be built between Santarém and the Surinam frontier (continuation of the road from Cuiabá-Santarém).

In the longer-term future, these roads would naturally not be the end of the story. The highways described above were only the beginning of the intended opening-up and integration. They would form the main road framework and would obviously lead to the construction of a number of secondary roads.<sup>27</sup>

24 A start had been made on asphaltting the Belém–Brasília highway, a project that had to be completed by the end of 1973 (*Boletim Informativo* 278, 4 May 1972).

25 The traffic capacity of the roads was determined from estimates of future traffic flows. It was assumed that, in 1980, from 50 to 400 vehicles would use the Transamazônica daily with the usual number at between 50 and 150 (Wozniewicz 1973, 4).

26 Excluding Manaus, the population north of the Amazon was estimated at about 400 000. This was less than one inhabitant per 3 square kilometres. The region covers about 15% of the total area of Brazil ("A Nova Epopeia da Perimetral Norte," *Rodovia* 301, Jan.–Feb. 1973, pp. 26–29).

27 The employment which was temporarily created by these road building projects was not very great, since the operations were highly mechanised. Detailed information is lacking. Although much tree-felling could still be done better by hand than with machines, only a few thousand workers would be required. In March 1971, 5200 people were employed along 980 km of the Transamazônica (*Rodovia*, 290, May–June, 1971, p. 63).

There would also be connections with roads which had been or were being built in the neighbouring countries. We have already pointed out that the Transamazônica was planned to connect with the highway from Pucallpa to Lima. In 1970, all but about 135 km had been completed (Morais *et al.* 1970, 45). There would also be a road from Caracas via Ciudad Bolívar to the Brazilian-Venezuelan frontier, to connect with the almost completed road from Manaus to Boa Vista. As the result of an agreement with Guyana, a link with Georgetown was also planned, while a link was assured with La Paz through an agreement with Bolivia. A road between Macapá and the frontier with French Guiana had already been in existence for some time in mid-1973.

The routes of the Transamazônica and the Perimetral Norte were planned not only to release various larger population centres from their isolation, but also to connect the points from which the tributaries of the Amazon are navigable. The aim was to integrate road and water transport and to encourage a more intensive use of the many navigable waterways. Along the Transamazônica river ports would be constructed or improved at Carolina, Imperatriz, Marabá, Jatobá, Altamira, Santarém, Itaituba, Humaitá, Porto Velho and Boca do Acre (Andreazza 1970, 7). Financially and technically approved plans already existed in mid-1973 for the improvement of the ports near Porto Velho, Altamira, Santarém and Itaituba (Boghossian n. d., 14; *Boletim Informativo* 453, 2 April 1973). The construction of the Perimetral Norte would be complemented by the provision of port facilities at Macapá, Caracaraí, Benjamin Constant and Cruzeiro do Sul.

This encouragement of inland shipping formed another aspect of the integration policy being pursued by the Brazilian government in the early 1970s. In order to improve communications, the government also extended and improved the post and telegraph network and constructed more airports. It was planned to build 126 new airstrips during a period of ten years and 50 of these had already been completed at the end of 1973 (SUDAM/Banco da Amazônia 1972, 10–12; *Amazônia – modelo de integração* 1973).

