

THE HISTORY OF CARTOGRAPHY IN THE METROPOLITAN REGION OF RECIFE

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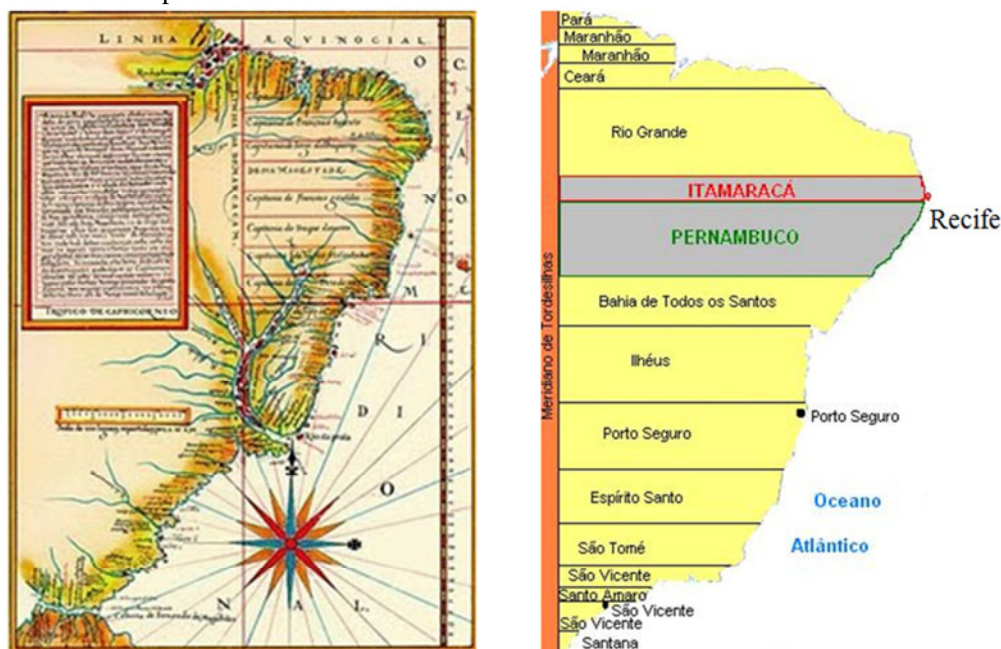
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ABSTRACT

The cartography can tell the story of a people, a city, and a country. The historic maps are related to events that mark an era. This research was aimed at recovering the cartography of Recife to show the process of creating the city. Recife was founded by the Portuguese and later dominated by the Dutch. The maps show us how happened the Dutch domain in Recife and the rescue of the city by Brazilians, still in the Portuguese domain. The methodology used was based on literature search and collection of ancient cartographic documents. The result is an exhibition with the cartographic visualization of the evolution of a people and one of Brazil's main cities.

1. INTRODUCTION

In the early years of the discovery of Brazil, Portugal had no desire to establish settlements for colonization. This phase of Brazilian history was marked by the extraction. The factories were responsible for marketing the products obtained in the colony sent to the kingdom. For easy transport the factories were close to ports.



1a - Map of 1574, cartographer Luiz Teixeira. 1b - Itamaracá and Pernambuco

Figure 1 - the Hereditary Captaincies

In March 1534, Brazil was divided into the Hereditary Captaincies which were intended to populate the colony to protect the newly discovered lands from invaders. The Hereditary Captaincies (Figure 1a) were formed by linear bands of land, indivisible and inalienable, which sailed from the coast extending to the line of the Treaty of Tordesillas, ignoring the landforms.

In the coastal region of the captaincy of Pernambuco and Itamaracá (Figure 1b) was developed villages that became towns. Now, the Metropolitan Region of Recife - RMR forms a large urban area, where lives 3 millions inhabitants. Recife is the capital of Pernambuco state.

2. THE FORMATION OF RMR

In the first decades of the sixteenth century, has started the process of colonization of the captaincy of Pernambuco. At the time the center was the city of Olinda. The current Metropolitan Region of Recife - RMR its lands were divided into two captaincies: Itamaracá and Pernambuco. In the captaincy of Pernambuco was the largest territorial portion of RMR, occupied about 60 miles south of the Site of Mark, where even today there is a cairn which divided the Captaincies.

The recipient of a captaincy of Itamaracá, the navigator Pero Lopes de Souza, has established the captaincy on a hill in Itamaracá in the village called Nossa Senhora da Conceição. The village is known today as Vila Velha, on the site are maintained period features, with few houses and a church. The village of Goiana was the Capital of Itamaracá later.

Figure 2 shows the coast of Pernambuco in the early seventeenth century, it is an original manuscript by Algemeen Rijksarchief. At the center, lies the village of Nossa Senhora da Conceição at Itamaracá, led by the Orange Fort. It can be observed on the left, on a hill, accessed by a waterway (Igarassu River), and the village of Igarassu. In the far north of the captaincy of Pernambuco, a few years before being dominated by the Dutch, it is speculated that the village of Igarassu has been partially destroyed.

To the navigator Duarte Coelho Pereira was handed the captaincy of Pernambuco. When he arrived in the region climbed to reach the Santa Cruz channel until reaching the Igarassu River and sailed over 6km inland, while the river had load-draught. In this place there was a small hill, where the first houses were built and a church dedicated to Saints Cosmas and Damian. The port was near and wetlands at high tide and covered by mangroves were far apart.

Two years after his arrival in 1537, the recipient of a captaincy Duarte Coelho decided to find the ideal place to build the seat of captaincy. A privileged geographical position of facilitator of defense against invaders, about 30km further south, on a hill that would allow him to watch the river deltas: Capibaribe and Beberibe. In this site was founded the city of Olinda.

Olinda grew down the slope of the hill called Morro da Misericórdia the up Beberibe river, a place called Varadouro das Naus, which built a small harbor for boats of small load-draught. Figure 3 is a map of John Texeira Albernaz, an original manuscript codex integrating the ratio of the State Government of Brazil in the North.

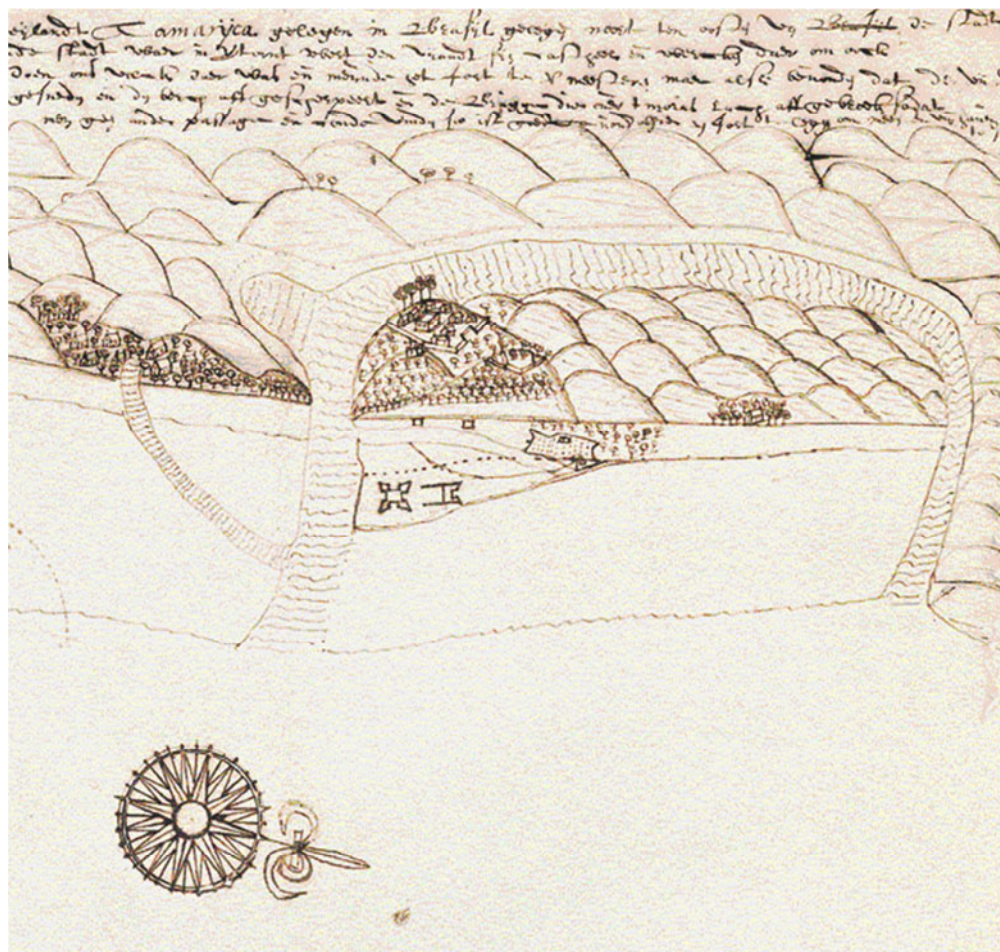


Figure 2 - Itamaracá and Igarassu - 1630.

Reis (1997)

Goulart (1997) gives the following description of the picture presented in Figure 3: "In the foreground we see the Picão Fort or Laje, built in the early years of the seventeenth century, from Tiburcio Spanochi project, directed by Francisco Frias de Mesquita, and the works performed by Christopher Alvares. Recife

has not much difference when compared to the drawing that illustrates the "Relação das Praças Fortes," from Diogo de Campos Moreno, 1609. The São Jorge Fort to the front of the peninsula. Olinda appears surrounded by a palisade would be extended by the sea, and a second line of defense finishing around the Carmo Convent."

Despite the rapid growth and consolidation of Olinda as capital, located near the Beberibe river and harbor Varadouro das Naus, it was through a channel of approximately 7km to the south, which was the outlet to the sea, for he had enough load-draught for navigation of larger vessels. It was a natural harbor that communicated with the Capibaribe River, which allowed rising by about 10km west to the hills belt of Tertiary from the Formation Barrier. Located on the peninsula ahead of a privileged natural harbor, was consolidated in a small village due to activities in the export of sugar.



Figure 3 – Recife and Olinda – 1616

Reis (1997)

The growing market demand for sugar in Europe, coupled with the natural conditions of soil and climate for growing of sugar cane, encouraged the deployment of several mills all over the captaincy. Bloody conflicts were waged with the Indians who sought to defend their lands, but always ended up being slaved or driven away to more distant locations.

Thus, the early seventeenth century was marked by the emergence of villages and sugar mills. Some sugar mills were installed along the Capibaribe River, which has become established as a waterway for transportation of production to the natural harbor near his mouth. The villages of São Lourenço da Mata and Várzea were noteworthy at this time. The Village Várzea was elevated to a parish a few years later.

South of the captaincy of Pernambuco also consolidated the occupation by the penetration of two major rivers in the region, Jaboatão and Ipojuca. The town of Santo Amaro in Jaboatão, emerged along the Jaboatão river and from the stretch of the lower Ipojuca river, the Ipojuca location. In the same region there is the formation of cities of Cabo de Santo Agostinho and Serinhaém. Jaboatão had its settlement built from 1593 by Benedict Luiz Figueira, the third owner of the São João Batista mill, today Bulhões mill.

According to Gould (1997), there are few known references of what would be Recife before the seventeenth century, and the graphical representation in map form oldest cataloged in 1609. A picture not unlike the one presented in Figure 3, the year 1616, which describes in detail how was the access of vessels to the natural port and Olinda. The great authors of the images shown in Figures 2 and 3 are the Portuguese, Diogo de Campos Moreno and João Texeira Albernaz I.

Diogo Moreno produced one of the oldest images of Olinda and Riverside Marine Reefs, dated 1609, is a "Perspective of Pernambuco as shown looked the sea this village until the Barretta [Recife]" (Goulart, 1997). This cartographic document is in the National Archives Tombo Tower, in Lisbon, Portugal.

The cartographer of the Portuguese Crown, Alberraz I, in turn, produced the map shown in Figure 3 "PRESPECTIVA. DO RESSIFE, E VILLA, DE OLINDA", which forms part of the Municipal Public Library of Porto, in Portugal.

Figure 4 shows map that was attached to a letter on June 10, 1634, where is described the moment of trying to take the island by the Dutch in front of the Cabo de Santo Agostinho. We can observe the town of Nossa Senhora de Nazaré, maintained for some time by the Portuguese. The island was called Walcheren by their new occupants. Nazaré is represented schematically, but the positions of the troops, fortifications and ships are listed in detail. This reinforces the tone of military cartographic production in this season. The original of this map is on file at the Deventer, Netherlands, whose inhabitants were contributors to the West Indies Company (WIC).

In the early seventeenth century have been consolidating information from some villages, the more that come forward to be part of the municipalities of the RMR are: Igarassu, Ipojuca, Itamaracá, Jaboatao dos Guararapes, Olinda, Recife and São Lourenço. However, it is during the period of the Dutch Domain, which follows this moment in history, when some of these villages have gone through urban transformations.



Figure 4 - Cabo Santo Agostinho – 1634

Reis (1997)

2.1 - THE DUTCH PERIOD (1630-1654)

In this period of history, Recife has the greatest transformations in physical space, wetlands are grounded, bridges are built, camboas are drained. From 1630 to 1654, with all the improvements in employment, Recife becomes the capital of Pernambuco. Olinda was destroyed by fire in 1630.

The Dutch needed to know the physical space of Recife, it was necessary to build their houses and fortifications. Two elements are critical testimony of Recife and Olinda landscape of that era: the painting of Gillis Peeters and the letter of Andreas Drewisch Bongesaltensis.

The map drawn by Andreas Drewisch Bongesaltensis (Figure 5) was thoroughly investigated by Gonçalves de Mello, who assumes to be the first map from Recife after the Dutch occupation. Drewisch have traveled to Recife in September 1630. Their presence is attested by documents dating from January 1631. The letter of Recife, he authored, is from July 1631. By the year 1635, there is news of his stay in Recife. Mello (1976).



Figure 5 - Recife – 1631 – Antonio Vaz Island.

Reis (1997)

The design of Drewisch is extremely important because it shows Recife before the Dutch invasion. Maurice of Nassau made urban works that changed the physical appearance of the city. It is a work of a technical, well-designed and rigorously metric relevant to the technique of the time.

Figure painted by Peeters is a wonderful image of Recife from Olinda, showing an intense movement of vessels in port, and the Brum Fort and Buraco Fort, the town's harbor, the buildings around the Antonio Vaz Island, and still the forts of Ernesto and Five Points. The painting resembles the map of 1631.

With the arrival of German John Maurice of Nassau-Segen in January 1637, the first improvements occurred in the harbor and the implementation of the first urban plan of the city of Recife.

The map (Figure 6) shows Dutch defenses carefully in Recife and in the Antonio Vaz Island and indicates a series of works by the Dutch. The Picão Fort (also known as Mar Fort) and São Jorge Fort was built by the Portuguese. One of the most important fortifications, the Ernesto Fort, was built around the Franciscan Monastery of Santo Antônio, serving as headquarters for the military administration of the site. To the south of the Antonio Vaz Island, was built a line of fortifications (hornaveque). There is a nearby house where Maurice of Nassau lived, between 1637 and 1642. Another important military construction, according to the letter, which was completed in March 1631, was the Brum Fort (Bruyn) north of São Jorge Fort, built in Commersteijn project. At the southernmost tip of the island is the strong Fredrick Henrick, known today as the Five Points Fort (Forte das Cinco Pontas). Of equal importance was the construction of a defensive wall around Recife. This work was protected by masonry cutting the edge with water.

That time the government took up residence in Recife, where the city Mauritius (Mauritzstadt) was being erected along the lines of Northern Europe, on the so-called Antonio Vaz island (current neighborhood of Santo Antônio and a part of the district of São José). The island was mostly guarded by two fortresses: the north by the Fort Ernesto, and the South, by the Five Points Fort, as shown in Figure 6.

However, it was necessary to connect the island of Antonio Vaz at the port of Recife and the mainland, so two bridges were built. A causeway linking the city to the other, the Boa Vista Bridge, which connected the island to the mainland, both built in 1644. Profound changes have taken place in the physical space of Recife, indicating that this time the city starts to grow on the water.

According to Mello (1976), who studied the picture in "The Cartography of the Dutch Recife" concluded it was a work of Dutch cartographer Cornelis Bastiaensz Golyath who worked in Brazil, probably between 1635 and 1641. The map shows projects for improvement of Recife, prepared in time for Nassau. The original version of 1639, which integrates the Bohm Vingboons Atlas, was own by the Archaeological Institute of History and Geography of Pernambuco. In his map of 1644, we can see the palace of Nassau, with gardens on the far right of the Antonio Vaz Island, and the bridges linking the district of Recife to the

mainland and the island. The urban plan of Pieter Post still provided for the expansion of the city Mauritius with the inclusion of a greater number of rows of blocks and a central square, bisected by a channel.

The researchers say the map of Figure 7 shows the Recife, the city Mauritius, part of Olinda and Varzea, dated 1648, the best graphical representation of Recife, established during Dutch rule. The author of this map Golijath Cornelio, was in Brazil since 1635. In the early 1640's was the cartographer of the government in Pernambuco.

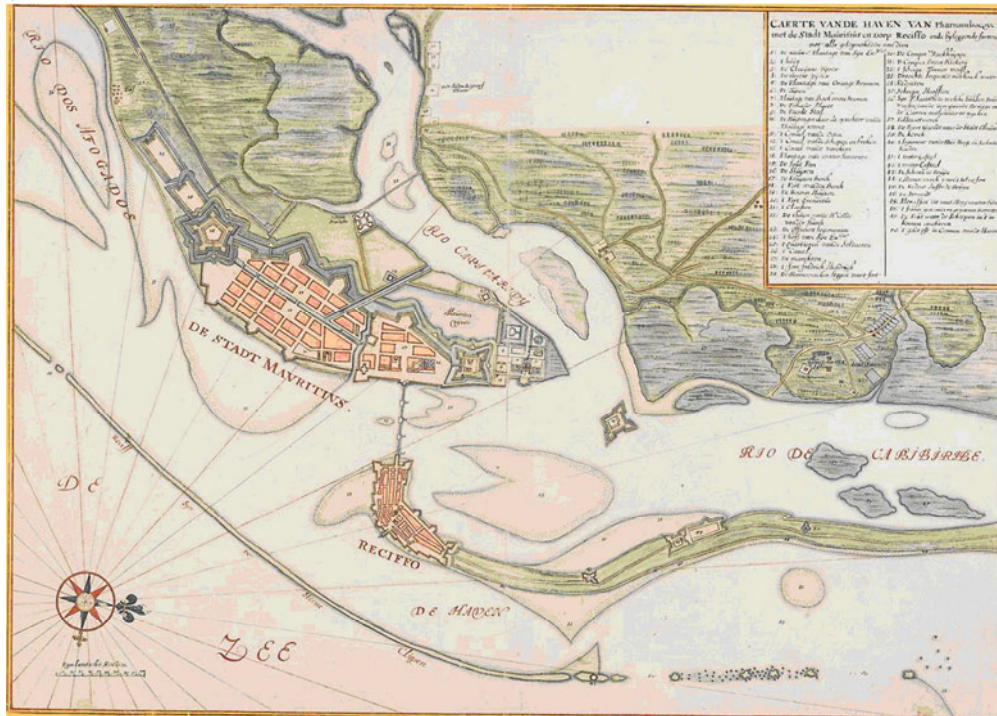


Figure 6 – Recife – 1644 – Antonio Vaz Island.
Reis (1997)

The survey work to produce the maps began in 1638, officials there are references to refer to the Netherlands to the drawings, in April 1639, at the initiative of Maurice of Nassau.



Figure 7 – Recife, City Mauritius, Olinda and part of Várzea – 1644
Reis (1997)

The description includes a wide area around Recife and Olinda, with detailed references to a series of valuable information on the location of major mills, and the cemetery of the Jews. Olinda (North) is recorded in the presence of an important work, the stone channel, which led Beberibe river water to the city, built by Governor-General Diogo Botelho, between 1602 and 1603. The work of more than one league in length was accurately represented on the map.

The city of Olinda has some built-up areas in front of the church. Noteworthy is the division of land in the area where the oldest drawing shows vegetation, as in part of the picture, which took the author to write *Civitas Olinda* (urban sprawl). The court, which sits next to the north and two west of Mercy, and are subdivided in parts, were hatched, as it had already been built.

3. EIGHTEENTH TO BEGINNING OF THE TWENTIETH CENTURY

Even after the expulsion of the Dutch, the progress has not stopped the cluster center and, in 1709, Recife became a village which motivated the Mascates War due to rivalry with Olinda, then seat of captaincy.

In the early eighteenth century the core was already well established (Figure 8). The city begins to grow slowly so sprawling from the center to the countryside following the paths of movement that grew obeying the topographic and hydrographic conditions, as well as through waterways and railroads (the *maxambomba*). The devices in these areas were gradually subdivided into lots and sites that were subsequently giving rise to some neighborhoods, Madalena, Torre, Derby, Beberibe, Apipucos and Várzea.

Figure 8 is 1771, refers to the Plan of Villa Santo Antonio of Recife in Pernambuco, located at - 8°04' latitude and -34°46' longitude in South America. It's a design that is closely related to the survey work at the Archive Districtal of Évora (Pernambuco, 1998) and the original Albino Antonio de Amaral, 1775, the Historic Archive of the Army in Rio de Janeiro. The date can be estimated by comparing the existing facilities in the district of Boa Vista to the left of the map built-up areas are shown on the maps from Vilhena (1773-1803) and Albino Antonio do Amaral (1775).

In the early nineteenth century, there was a major development in the city, particularly in the district of Boa Vista that grew toward the Derby and Santo Amaro (this time there was a connection with Santo Antônio and São José across the bridges of Boa Vista and Princess Isabel).

In 1823 the town of Recife became city and finally in 1827 was elevated to the status of capital. The city's growth is linked to the fact that the "opening of ports to Friendly Nations," according to the arrival of the Portuguese royal family to Brazil. One should not forget that in the late nineteenth century to the abolition of slavery generated a great migratory movement of slaves into the city in search of better living conditions, emerging then, the *Mocambos*.

At this moment in history, the more densely populated areas of Recife were exactly the districts of Recife, Santo Antônio and São José, which already showed a consolidated urban and well defined area, with long streets that were oriented in the longitudinal direction (north /south), being cut for orthogonally alleyways smaller. The neighborhood of São José began to make his calling for trade, part of their mansions trade had on the ground floor and housing on top, and the presence of the Market of São José, opened in September 7, 1875. The urban area was well defined and presented some courtyards and public square market.

The mapping of this most important period is presented by Barreto (1994, p. 49), the plant from city of Recife and its environs from 1870, is a lithograph by Francis Henry Carls withdrawal of the Book Around Recife, whose author is F. A. Pereira da Costa. The plan confirms the city's sprawling growth and shows the consolidation of important elements of penetration in the continent, such as Caxangá Avenue, Capibaribe River, the design of the highway of Jaboatão and the road of the south.



Figure 8 – Recife and City Mauritius – 1771

Reis (1997)

In the early twentieth century, the downtown (Figure 9) was formed by the districts of Recife, Santo Antônio, São Jose and parts of Boa Vista, and already there was a consolidation of the outlying districts.

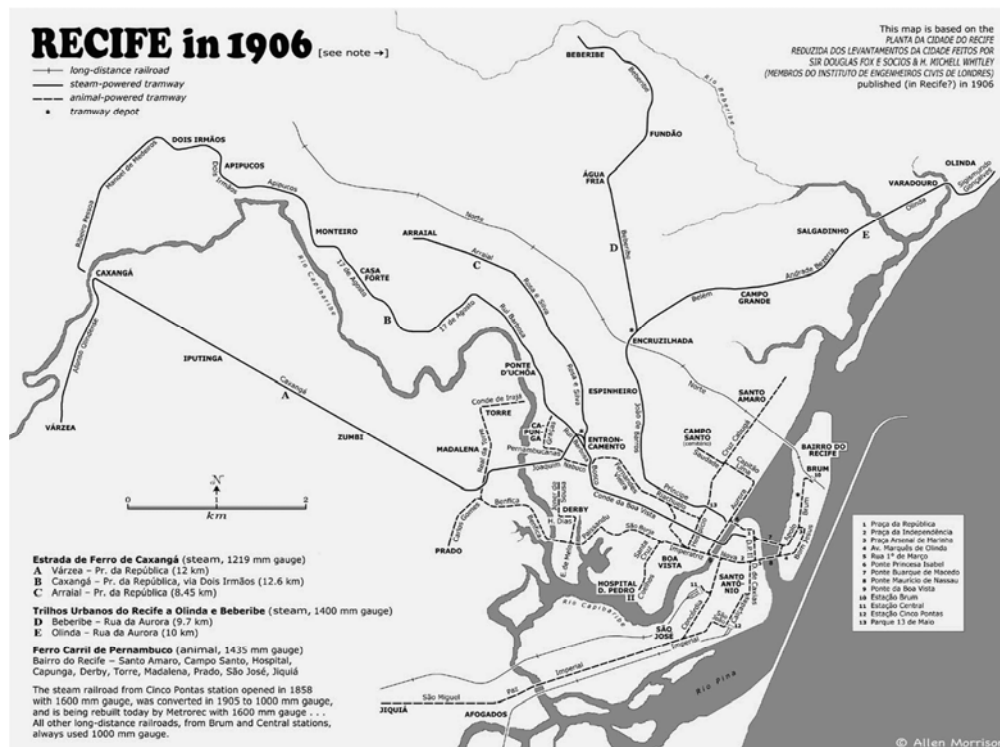


Figure 9 - Recife and São José, Santo Antônio, Boa Vista and Santo Amaro - 1906

<http://www.tramz.com/br/re/rem06.html> (2010)

The mapping of the most important early twentieth century is this map from 1906 titled "Plan of the City of Recife, scale 1:10.000, reproduced survey works of the city made by Sir. Douglas Fox and Partners & H. Michell Whitley, members of the Institute of Civil Engineering in London.

4. EARLY DECADES OF THE TWENTIETH CENTURY UNTIL TODAY

In the first half of the century, Recife assumes the character of a great center of attraction for immigrants. Among other reasons that explain this fact are the process of industrialization and the dismantling of old systems of rural production. The disentanglement favored big landowners evicting minors, unable to produce, sold their land and went in search of better living conditions in the big city.

Between the twenties and forties, Recife had a population growth of around 46%. However, the provision of collective goods and services has not grown proportionately. Importantly, in 1938, the then mayor, Novaes Filho, banned the construction of shacks and slums became officially recognized in statistics and cartography of the city.

The most important cartographic document of the second quarter of a century is the Plant of Recife and its surroundings in the year 1932 (Figure 10) belonging to Recife City hall.

This plant is rich in information about the process of consolidation of some popular neighborhoods and penetration of the population towards the south and west.

The plan allows us to observe that the central part of the city heads towards Afogados to the neighborhoods of Ipiranga, Estância and Areias always by the shaft of the roads already exist, such as street and avenue José Rufino and São Miguel. To the south was moving at Cabanga and Pina. In the avenues: Herculano Bandeira and Beira Mar had scattered dwellings, with a higher concentration near the Church of Nossa Senhora de Boa Viagem.

The largest urban concentration was located by the river Capibaribe, directing to the Derby, Capunga, Ilha do Leite, Coelhos, Graças, Aflitos, Espinheiro, Santo Amaro, Encruzilhada and Campo Grande, these last three closest to the basin of Beberibe .

The city grew rapidly, "incorporating ancient mangroves, wetlands, landing the river beds, or even climbing the hills, where even then, the green of the Atlantic reflected in calm waters that cut the plain." (Barreto, 1994).

The occupation of the hills, especially the area north of the city was also given depending on the policy of eradicating shacks promoted by then-Governor Agamenon Magalhães.



Figure 10 – Map of Recife from 1932
Barreto (1994)

The Plan of the City of Recife and its surroundings from 1951 (Figure 11), 1:20.000 scale, is an important element analysis on the initiation of the Urban Conurbation between the cities of Recife, Olinda and Jaboatão.

Other important elements to be observed in the plant are the consolidation of the southern part of the City, which apart from the roads near the sea, presents the avenue Mascarenhas de Moraes and the urban neighborhoods of Imbiribeira well defined. Note the presence of the Guararapes International Airport. In the southwest there is the existence of the Jordão, BR 101 (highway), and the current Residential Units - UR 1, 2 and 3.



Figure 11 – Map of Recife from 1951

URB-Recife

Jaboatão comes to meet Recife, blending into the hills of the neighborhoods of Tejipió, Coqueiral Sancho and Alto da Bela Vista.

To the north of the city there is the beginning of the occupation in the hills, as the Morro da Conceicao, Alto José do Pinho, Alto Santa Terezinha do Deodato, Esperança, Nova Descoberta, Vasco da Gama and Córrego Boleiros.

From the 70's, the process of expansion of the city begins to consolidate to become a unified urban area. To manage this process was established by the Supplementary Law nº. 14 in September 9, 1973 the RMR linking cities and keeping them administratively independent. The Deliberative Councils and Advisory Metropolitan Region of Recife were imposed. On July 3, 1975 was created the Development Foundation of Metropolitan Recife - FIDEM - as a body of technical support to these councils.

When FIDEM was founded, twelve counties were legally recognized: Abreu e Lima, Camaragibe, Cabo, Itapissuma, Itamaracá, Jaboatão, Moreno, Olinda, Paulista, Recife and São Lourenço da Mata. Currently, the municipalities of Ipojuca and Araçoiaba are part of the RMR, totaling fourteen.

With the FIDEM, the Cartography in Recife was a huge boost of production and quality. Many cartographic documents were produced in different scales. Over the past few decades aerophotogrammetric surveys were performed for the construction of cartographic databases, over the metropolitan area of Recife.

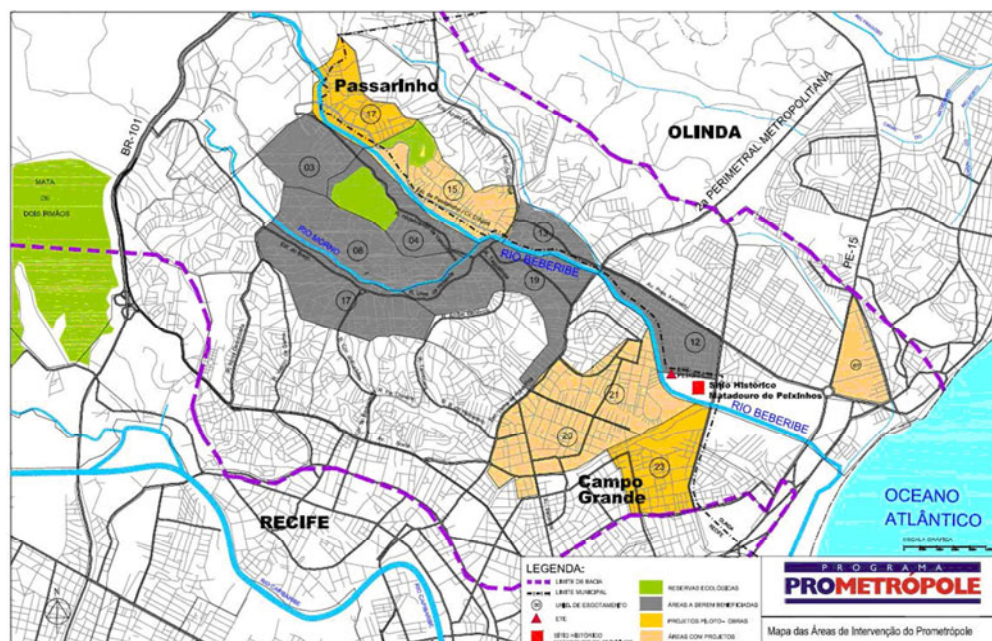


Figure 12 - Recife – 1999

FIDEM - Project Metropolis (2010)

In 1987 it launched the Nucleation Center map on a scale of 1:20,000. Following three papers were prepared to cover the rest of the RMR. With that the charts were prepared: West, North and South

The nucleation map from the municipalities of Recife and Olinda (Figure 12) had lagged in relation to other municipalities of the RMR. With these flights the charts were being updated and can produce cartographic documents covering the entire RMR.

The FIDEM has long been providing the plants UNIBASE on magnetic media. More recently, in 2001 this municipality has provided charts of nucleation updated on magnetic media in the file formats: .dxf or .cad.

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