

Highs and lows of the resortification of the Saint-Paul coast (Reunion Island)

Abstract

Reunion has few white sand beaches. The most exploitable of them are on the Saint-Paul coast on the west of the island, which are currently in the news after a spate of shark attacks. Their development for tourism has turned Saint-Gilles, once a small fishing and farming village, into a local and international beach resort with extensive repercussions on the organization of the municipal territory in which the agricultural uplands of the hinterland occupied an important area. This article analyses the imbalances created by such development and its sustainability conditions.

Keywords

Reunion • Saint-Gilles • resortification • Uplands • urbanization

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Introduction

Covering 24,029 ha, Saint-Paul is Reunion's largest municipality and the cradle of the island's settlement (1665). The expression "*From the beating of the waves to the summit of the mountains*" which, from the time of the Compagnie des Indes, denoted the division of the territory through concessions of land strips extending from the shoreline up to the mountains of the interior, takes on its full meaning here. It expresses the variety of the municipality's terrain-white or black sand beaches, medium-altitude sub-horizontal zones, *remparts* (rock faces) and high peaks (2000 m) of the interior (Fig. 1: transect W/E), as well as that of its landscape and economy: an urbanized and resortified coastal strip, rural, residential mid-slopes and the impressive inner highlands of the national park, which were awarded UNESCO World Heritage status in 2010.

Of the island's 207 km coastline, less than a fifth consists of sandy beaches (14 km of black sand, 25 km of white sand), located essentially in the west (87%) and south (13%). Saint-Paul, with the longest seaboard, boasts a total of 17.7 km (45%) and 10 of the 24 kilometers of the west coast lagoon (Fig. 1), a situation envied by other towns. On the strength of this asset, the municipality has focused on beach resort development, thus emerging as the pacesetter of Reunion tourism (Moya 2001). However, the question arises of the sustainability of this development option in a context of spatial imbalance between the territory's lowlands and uplands, the economic fragility of an activity subject to uncertainty and facing strong competition

from neighboring islands² and the environmental risks of a highly anthropized coastal area.

Examining this question first requires a look at the territorial organization of the municipality, before analyzing the consequences of its resortification and the sustainability factors of this type of development.

Coastal resorts, rural hinterland

Until the 1970s Saint-Paul's hinterland predominated. With a larger population it offered a wide urban strip at mid-slope, organized around sugar cane planting (400 m to 600 m altitude) and some mixed farming (geranium and vegetables). From the 1970s the tendency reversed with the growing attractiveness of the coast.

Saint-Paul plays beach resort card

The beach resort zone is far from uniform in terms of its development, evolution, scenery and activities as well as its frequentation. Boucan Canot and Roches Noires, with no coral barrier, are favored more by outside tourists and local surfers. Saint-Gilles-les-Bains, L'Ermitage and La Saline-les-Bains, which are bordered by a lagoon, provide a tourism offer based on relaxation, leisure and family picnics beneath the *filao* (casuarina) trees. The first two localities attract the most visitors and have received the full attention of developers. Boucan Canot has been completely redeveloped (roads, amenities, shops,

¹ Also the title of the book by C. Lavaux: *La Réunion: du battant des lames au sommet des montagnes*, a detailed survey of the island's municipalities.

² Notably from its direct competitor Mauritius, with its beachside hotels, more attractive beaches and lower cost of living.

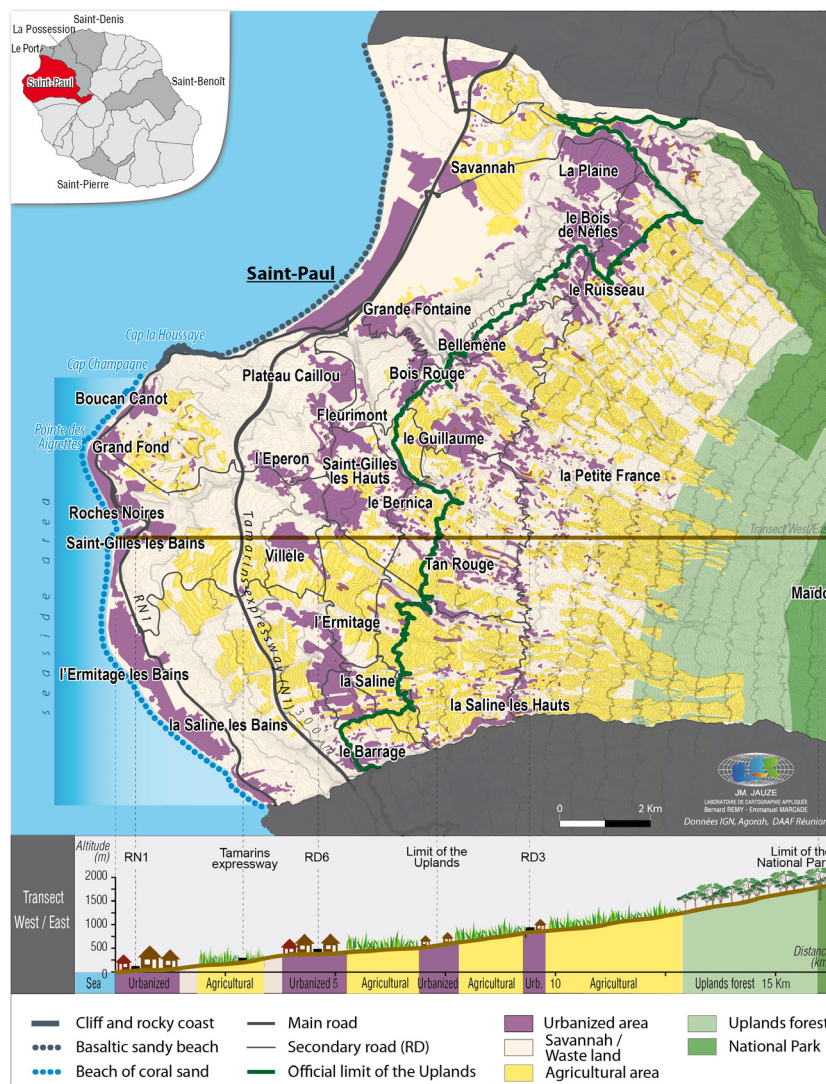


Fig. 1. The Saint-Paul coastline comprises, north to south, 6km of black sand, 700m of cliffs and low rocky coast, 11km of white sand, constituting the beach resort zone

beach). Roches Noires, next to the village of Saint-Gilles-les-Bains, enjoys the proximity of a marina, a yacht harbor and an aquarium.

The presence of the beaches along the RN1 highway has given rise to a string of villages with 2,000 to 7,000 inhabitants: Boucan Canot, Saint-Gilles-les-Bains, L'Ermitage-les-Bains and La Saline-les-Bains. Saint-Gilles stands out from the rest by virtue of its urban headcount (7,651 inhabitants), its activities and its spatial extent. At the beginning of the 19th century, cut off from Saint-Paul by Cap Champagne, it was just a tiny fishing and farming village that grew in importance when the railway arrived in 1882. Its vocation as a beach resort was slow to emerge as the Reunion Islanders preferred to holiday at altitude during the summer and the winding mountain road linking the resort to Saint-Denis constituted a real barrier (Lefèvre 1986).

It was not until departmentalization (1946) with its highway development plan that Saint-Gilles truly achieved the status of a beach resort. The opening of the *corniche* road (at the bottom of the cliff between Saint-Denis and La Possession) in 1963 provided a coastal link between the north and the west, which allowed visitors to avoid the arduous mountain route. In 1965, the beach amenities development plan allowed the deviation of the

RN1 and improved access to the town. In 1971, Saint-Gilles was classified by prefectural order as a "tourist resort" and officially became a "beach resort" in December 1994.³

An image, iconic locations, a magnet

For Reunion Islanders Saint-Gilles is something of a legend, charged with images and fantasies. As early as the 1960, it was perceived as the vacation spot of a chic local bourgeoisie, occupying "oceanfront" or cliffside (Cap Champagne) villas "with sea views". This perception was to endure, overshadowing the huts of fishermen and farmers beneath the *filao* trees and in the savannah of the hinterland. While Saint-Gilles still retains the image of a residential area for an affluent class mostly made up of *Zoreils*⁴ it has also become, through beachside recreation, a place of exoticism and mimesis for Islanders who had long turned their backs to the sea. For the young, it is a centre of entertainment, related to the presence of bars, nightclubs, shows and so on. The reputation of Saint-Gilles is rooted in a number of iconic locations both old and new: the Chic Escale dance

³ The management and development of the resort are the responsibility of a semi-public company: SEM Balnéaire Saint-Gilles-les-Bains, created in 1994.

⁴ Local name given to the French from mainland France.



Fig. 2. The Chez Loulou restaurant is a Saint-Gilles icon and guardian of local culinary heritage



Fig. 3. The port of Saint-Gilles, with a capacity of 400 fishing and pleasure boats, was built over the small fishing port of 1969 and is now the epicenter of the resort. The background shows the advance of hillside construction

hall, the Père Lafrite and Camp des Finances campsites, the VVF (Family Holiday Village), the Chez Loulou (Fig. 2) and Chez Go restaurants, the open-air theatre, the port, and Boucan and Roches-Noires beaches, and so on.

The resort's appeal is based on its beach activity potential, which SEM Station Balnéaire has sought to enhance with the refurbishment of Boucan Canot, improvements to L'Ermitage (traffic lanes, car parks, networks, public facilities, greening), beach cleaning and safety (lifeguard/rescue stations) and the creation of the new port of Saint-Gilles (Fig. 3). The scheme responded to the dual necessity of rebalancing the urban development of the agglomeration by establishing a link between the old village core and the tourist ZAC (development zone) of L'Ermitage and creating a leisure hub (big game fishing and water sports centers, fish market, shops, businesses, aquarium, festive events).

The dynamism of Saint-Gilles can be measured by the popularity of its beaches and seafront, with a Sunday and bank holiday visitor-count three times higher than that on weekdays⁵ even during school holidays, thus illustrating the considerable Sunday mobility of Reunion families (Caze-Duvat 2003). This dynamism is backed by a full range of accommodation: 16 graded

hotels, 62 holiday homes, bed and breakfasts and furnished tourist accommodation⁶ and a municipal campsite open during school holidays.

It is also a festive place: exhibitions, sports events, a carnival (Le Grand Boucan, created from scratch), open-air theatre productions and a nightclub provide continuous entertainment. Its setting and quality of life sustain the growth in the number of permanent residents (10,202 inhabitants in 1990, 13,649 in 1999 and 18,219 in 2007), contributing to the urban boom of recent years and soaring real estate costs.

A changing agricultural hinterland

The Uplands of the town of Saint-Paul can be said to begin at around 300 m (Fig. 1). On a road network parallel to the coast they include a cluster of villages of between 4,000 and 8,000 inhabitants: La Plaine, Bois de Nèfles, Bellemène, Le Guillaume, Saint-Gilles-les-Hauts and La Saline. This built-up mid-slope strip lies in an essentially agricultural landscape, inherited from the great sugar plantations of the 19th century. Small polyculture combining geranium and vegetable farming which, beyond the sugar-cane limit (600 m), impinged on the first forested slopes only survives in a residual form at Petite France. The problem of drought, which was a traditional obstacle to agriculture in these uplands, has now been resolved by the completion of the gigantic scheme to move water from east to west.⁷

Saint-Gilles-les-Hauts stands out in this cluster by virtue of its evolution, which testifies to the degree of change undergone by these highland settlements (Sautron 2004) (Fig. 4-a). Perched on a sub-horizontal plateau at between 250 m and 450 m, the agglomeration is made up of three districts: L'Eperon in the north, Saint-Gilles-les Hauts in the west and Villèle in the south. As in the rest of the island, it was the advent of sugar cane that made the reputation of great estates such as L'Eperon or Villèle, home to the Desbassyns plantation.⁸ With the abolition of slavery, departmentalization and setbacks to the sugar economy, the estates were fragmented into small and medium-sized properties settled by the descendants of slaves, former farm workers (indentured Indians), *Petits Blancs* (poor whites) and today, a population extraneous both to the area and to agricultural activity.

Between 1990 and 1999 the population of Saint-Gilles-les-Hauts grew by 25%, an increase well beyond that of the municipality of Saint-Paul and the west region as a whole, while its housing stock rose by 50%. In 2010, service sector workers accounted for more than 81% of the population.

As with the lowlands, the reputation and appeal of the uplands rests on a number of iconic locations (Jauze 2011): Petite France, with its geranium farms and stills in the fields; Maïdo, which attracts thousands of visitors coming to picnic in its tamarind forest or admire the cirque of Mafate from its belvedere viewpoint⁹; the Desbassyns family estate, with its museum and national heritage-listed *Chapelle Pointue*; and the arts and crafts village of L'Eperon. Maïdo boasts a network of mountain-bike trails with a reputation beyond Reunion.

Yet in local representations, the existence of these uplands is somewhat overshadowed by the predominance of the lowlands.

⁵ In 2010, the average occupancy rate for hotels in the West was 83.1%, compared to 72.1% for the northeast and 67.7% for the south (Insee Réunion 2011).

⁷ This operation, launched in 1989 by the Department Council and dubbed "the project of the century," consisted in capturing the water of the cirques of Salazie and Mafate and bringing it through 30km of underground galleries to the water-poor west.

⁸ The Desbassyns family played a major part in the island's sugar economy, improving farming methods and sugar extraction processes.

⁹ Two severe wildfires destroyed 800ha in 2010 and 2,700ha in 2011 at Le Maïdo and its vicinity, requiring human and technical (Dash 8) assistance from mainland France.

⁶ At the time of the study, the average number of users per linear kilometre of beach was 1,000 for the L'Hermitage/La Saline area.

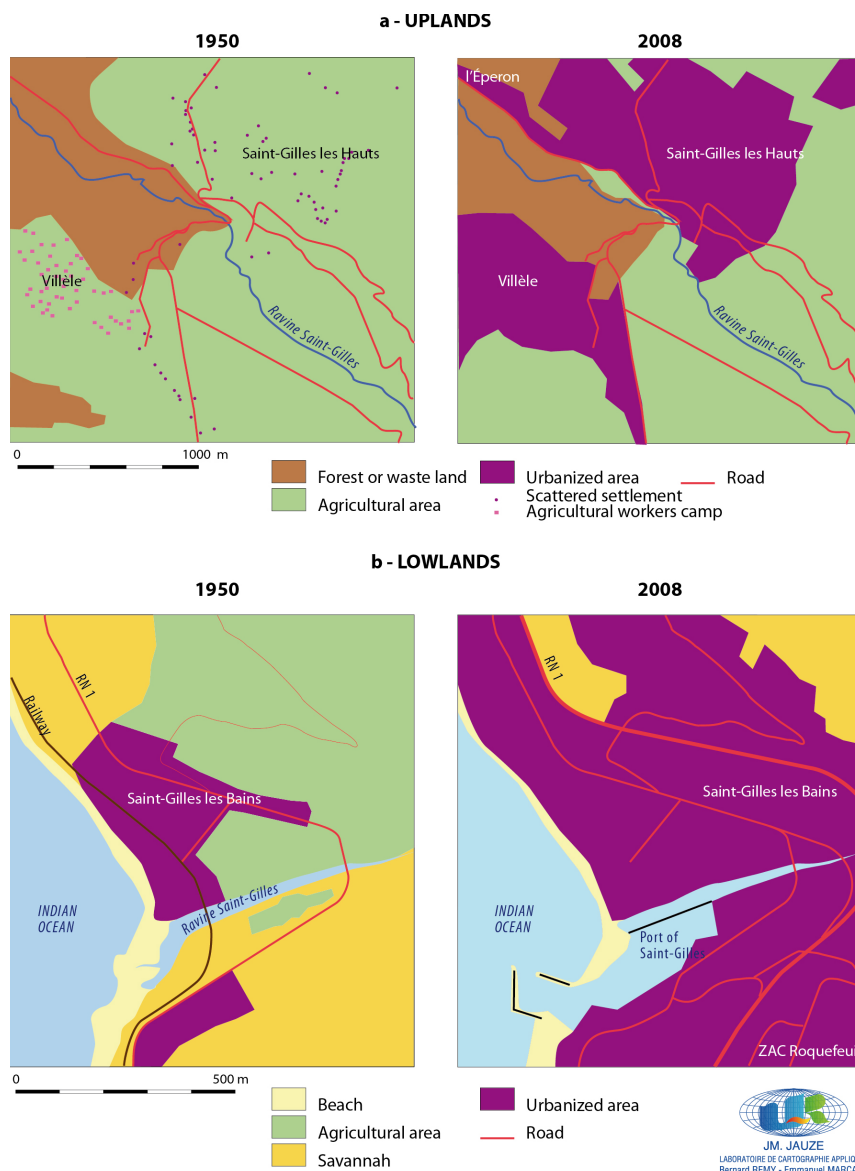


Fig. 4. Land use changes in the uplands (a) and the lowlands (b) of Saint-Paul, from 1950 to 2008

Piecemeal, problematic urban development on the coast

The haphazard pattern of occupation of the beachside coast has become problematic in a number of respects: the encroachment of private homes on the public maritime domain, the difficulty of creating centrality in a multipolar urban cluster, soaring coastal real estate prices and urban sprawl into the farmland of the hinterland.

Coastal occupation and the question of geometric paces

Saint-Gilles was the focus for the urban growth which spread between the RN1 highway and the sea, developing mainly towards the south and the beaches protected by the coral barrier reef. L'Ermitage and La Saline-les-Bains were gradually colonized by new homes that often impinged on the "Geometric Paces".¹⁰

In the 1950s, the only communities to emerge were Saint-Gilles-les-Bains, L'Ermitage and La Saline. The area still seemed

an oasis of greenery with its 266 ha of *filao* trees and savannah, and 25 ha of vegetable crops, compared to 15 ha of built-up areas (Fig. 4-b). The 1970s heralded the start of rapid and disorganized urbanization: the improvement of road links, the arrival of large numbers of Metropolitan French, leisure activities and the classification of Saint-Gilles as a "tourist resort" caused a "rush west". Oceanside hotels and holiday homes or main residences took over the coast. The first housing estates appeared south and north of the village of Saint-Gilles. "These hasty, incoherent constructions give an impression of 'recreational shanty-towns'" (Dalama 1997). "The result is a dichotomous organization of the area, displaying affluent residences by the sea and, on the mountain, the often flimsy dwellings of laborers, fishermen and other menial workers" (Lefèvre 1986). Although the area between the RN1 and the lagoon was far from completely colonized, the residences were invading the promontories with a sea view (Cap Champagne).

In the early 1980s, urbanization intensified, sustained by the charm of the coast and its quality of life. Major tourist operators including Club Méditerranée, Novotel, Village Vacances Familles

¹⁰ The *Geometric Paces*, also called *King's Paces* are of colonial origin and represent a strip of land 81.23 metres wide, parallel to the coast and extending inland from the high-water line. In principle this space is inalienable and belongs to the Public Maritime Domain (DPM).



Fig. 5. Sustaining wall of a private property encroaching on L'Ermitage beach

(VVF) fought for the last available beachside plots. The 1990s sounded the death knell of vegetable farming. Over a period of forty years, the built-up area grew 13-fold to 194 ha while natural spaces (140 ha) shrank by half, causing the *Journal de l'île* to headline: "Saint-Gilles—a coast vanishing under concrete?" (Mano 1992). Today, urbanization continues to progress, increasing the density of the built-up area in the form of two- or three-storey housing projects and spreading beyond the RN1 (Fig. 4-b) on to the first slopes of the hinterland - ZAC Roquefeuill (Saint-Gilles) and ZAC Celestin (La Saline-les-Bains).

The 1990s also saw large-scale encroachment of new constructions on the Geometric Paces, which, despite their inalienable nature, had been sold by the state to private buyers between 1922 and 1974.¹¹ This massive privatization of the Public Maritime Domain explains the wall of urbanization in the beachside zone, which prevents people from gaining free access to the beach.

The municipality of Saint-Paul was aware of the dangers of this disorderly urbanization yet it attempted a collaborative project in the 1980s - the beachside ZAC (urban development zone) of Saint-Gilles-les-Bains. Intended to contain tourist amenities with a local and international vocation alongside housing units and public facilities, the zone did not meet with the anticipated success; "the forest bordering the lagoon has given way to a lifeless, soulless urbanized space, in which the constructions were put up piecemeal, with no link between them, or any form of consultation" (Dalama 1997).

The *Loi Littoral* (Coastal Areas Act) succeeded in slowing the unfettered occupation of the Geometric Paces but circumventions can still be observed, sometimes based on sea-related activities, sometimes on economic pressures or strategies of gradual encroachment on the beaches (Fig. 5). Demolition orders issued by the prefecture are rarely put into effect.

Urbanization uncondutive to the emergence of centrality

The linearity of the resort, extending for a dozen kilometers, does little to favor the emergence of a central node providing structure to an urban cluster fragmented into juxtaposed districts (Fig. 1), each operating individually. Shops, commercial services, craftsmen and private houses are strung pell-mell along the RN1, with a greater density in the original core districts.

As the Saint-Gilles-les-Bains tourist development plan underlines, the agglomeration is closer to being a "beachside town" than a "beachside resort". In the first place, it was not

originally conceived to serve as the "beach resort" which it was subsequently decreed to be as a result of its evolution. In addition, different functions, aimed at different users, share the same space: an urban function for permanent residents, a beachside recreational function for day = trippers and local visitors and a tourist accommodation function for outside tourists. The quasi-permanence and simultaneity of these functions with peaks of overcrowding has had disruptive consequences.

The only highway crossing the agglomeration is saturated. Traffic circulation is complicated by the lack of pedestrian areas, with motorists and pedestrians sharing the roadway. "Town planning is of mediocre quality: public spaces are few and shoddy, constructions disparate and inconsistent, urban and landscape quality is under increasing strain and is steadily deteriorating". To this can be added "a lack of clarity in the use of spaces" (Odit France 2008) related to the autonomous and even competitive management of the different districts of the resort.

Through a Resort Contract involving State, Regional Council, Department Council, Town and various partners, the Saint-Paul municipality is attempting to meet the challenge of concerted and functional redevelopment of the area in order to create a genuine "heart of the resort" and solve the present difficulties. The 2009 opening in the hinterland of the mid-slope *Route des Tamarins* expressway (Fig. 1) has provided an alternative to the cross-town route by absorbing through traffic.

Centrality could be enhanced through the link between the old core village of Saint-Gilles and the yacht harbor by treating the port district as a town section serving not merely a nautical purpose but extending to residential, commercial and recreational uses.

The developers also intend to create links between the different districts of the resort: a coastal footpath, a seaside tourist mini-train, electric bicycles under the GERRI (Green Energy) 2030 scheme, redefinition of the RN1 to include pedestrian sections and improved crosslinks with the *Route des Tamarins*. This is the necessary price of an attempt to bring coherence and clarity to the zone as a whole.

Coastal property price escalation, periurbanization of the uplands

The west has the highest average property rental and purchase prices in the department (Agorah 2006). With land and building inflation on the coast, a population interested in the region, with its appealing environment and proximity to the employment areas of Le Port and Saint-Denis to the north, has been driven to settling on higher ground inland (Dafreville 2001).

Between 1982 and 1990 the mid-slope population more than doubled, rising from 11,848 to 29,525 inhabitants. The increase slowed somewhat after 1999, remaining strong (20.53%) and showing property-price-linked variations between villages. Demand in highly sought-after villages such as Le Guillaume, La Plaine and Saint-Gilles-les-Hauts has led to local house price escalation deterring the arrival of new migrants.¹² However, there are other locations (Bellemène, Bois de Nèfles) less attractively situated with regard to the coast and offering still affordable property prices, which are achieving some success.

Buyers include a high proportion of intermediate occupations, a marked increase compared to 2004 when only 23% belonged to this category (Agorah 2005).

The accelerating periurbanization of the uplands can be seen in the evolution of urban sprawl (Fig. 6). The years 1990 to 1999 witnessed a degree of densification of the urbanized area, notably in the districts of Saint-Gilles-les-Hauts and La Saline, which went from 5 to 53.2 dwellings per ha. At the same time, built-up areas are gaining on agricultural or uncultivated land.

¹¹ This situation is not specific to Saint-Gilles as it also exists on Mauritius (Jauze 2010).

¹² Between 1992 and 2001, Saint-Gilles-les-Hauts was among the districts of Reunion in which prices per square metre of building land increased the most (Agorah 2003).

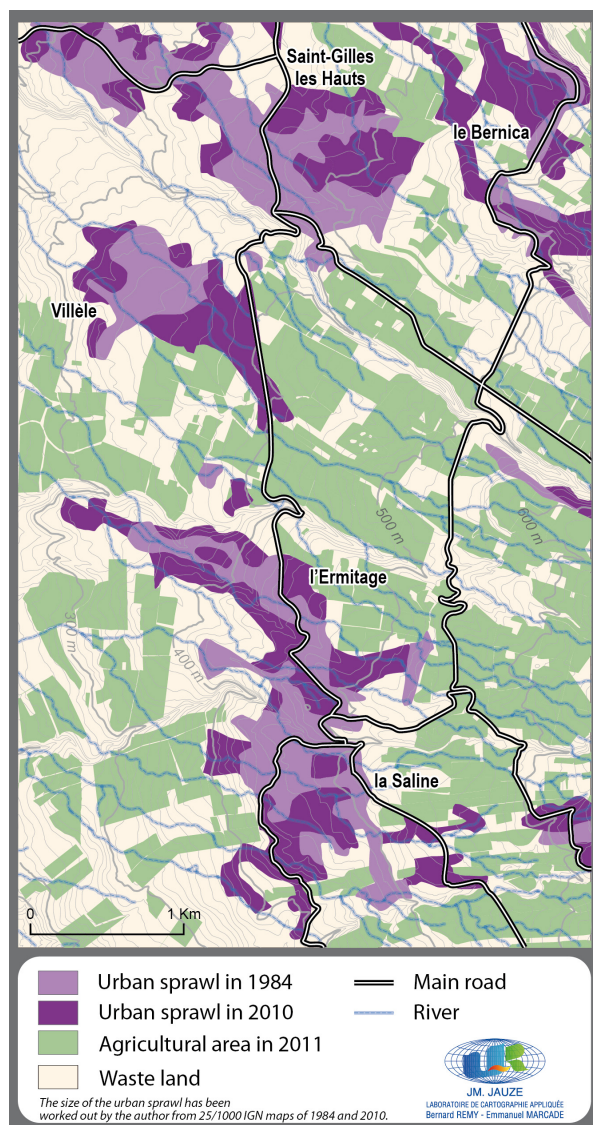


Fig. 6. Evolution of urban sprawl in the Saint-Paul uplands, from 1984 to 2010

In fact, urban sprawl is outpacing the process of densification, a situation that can be set in relation to the attractive coastal locations (Agorah 2003). This dynamic is changing the face of the original villages, which, as they coalesce, prefigure the development of a continuous mid-slope urban belt following the main communication routes.

The danger facing this area in the short term is urban sprawl on to farmland, driven by three factors: the strong demand for building land, the arrival of water as a result of the east-west water-moving scheme (Delcher 1994) and the *Route des Tamarins* which places the beachside area within half an hour of Saint-Denis.

How sustainable is the development?

The evolution of the beach resort and the efforts to give it an international dimension have had repercussions at different levels and on different scales. The social partitioning of the area, the risk inherent in monoactivity revealed by the chikungunya health crisis, the threats to the environment and the coast/hinterland divide raise the question of the sustainability of development.

A socially sectorised area, conflicts of use

The urbanization of the resort led to sectorization of the area hinging on the RN1, with an affluent residential zone by the sea and a modest, precarious housing zone for farm workers and fishermen inland (Lefèvre 1986). This socio-spatial structure has been disrupted by demographic growth and the massive arrival inland of people from the new middle-income or affluent social categories who are unable to obtain housing near the sea. Concomitantly, the improvement in living conditions of the local population is steadily transforming the social and residential landscape.

Today, a coastal strip can be identified that is occupied uniformly by the most affluent households, while a social gradient emerges from the shoreline towards the inner uplands (Fig. 7). Overall, the beachside zone is home to 62.27% of higher managerial and professional groups, compared to 37.73% for the uplands. Conversely the uplands are inhabited by 83.14% of blue-collar workers and 82.38% of farmers, compared to 16.86% and 17.62% respectively in the beachside zone. More detailed analysis reveals the existence in the mid-slope of a tier made up of middle-income categories (55.38% of intermediate professions and 75% of white-collar workers) arising out of recent migration and bringing profound change to the disadvantaged social landscape.

Saint-Gilles stands out from the rest of the island thanks to the high proportion of its population that comes from mainland France (*Zoreils*). Although no statistic provides an exact figure, their share is estimated to be over 60% of the local population which causes the resort to be dubbed "*Zoreiland*". Saint-Gilles and La Saline alone account for 75.32% of this population. Their presence dates from the 1960s when the first Metropolitan civil servants arrived on the island seeking a certain quality of life and tended to settle there.

The social structure of the resort has given rise to a number of problems including integration of the local population, insecurity and conflicts of use.

The low participation of the local population in the tourist economy has always been the resort's weak point, all the more as this population considers, rightly or wrongly, that it has been despoiled of its land. This feeling of dispossession is compounded by one of exclusion. "To the question 'what do you think of tourism and tourists?' 68% responded that tourism is important for Reunion's economy and the development of the resort, but that tourists lack any real contact with the local population" (Adrasset 2001). Apart from commercial activities, direct jobs (hotels, catering, tourist agencies, etc.) do not go to the Saint-Gilles population as a priority which, in the context of high unemployment, leaves them feeling sidelined from development especially as decisions concerning regional planning are always taken from above without any consultation.

Growing insecurity is tarnishing the image of the resort. In 2010, theft accounted for about 85% of offences, compared to 8.5% for assault and 6.5% for property crimes. Urban densification, the concentration of affluent social categories, night-time activities, heavy frequentation and unemployment are all factors conducive to these types of delinquency. The authorities are taking the issue seriously and have strengthened security by installing a gendarmerie station at the heart of the resort, with doubling of personnel levels at weekends and during holiday periods.

Finally, overcrowding is the cause of numerous conflicts of use. Conflict has arisen from the closing of "fishermen's paths" by residents that prevents access to the sea along their properties. There is also conflict between beach users and owners of "oceanside" properties (hotels and residences) who privatize the Public Maritime Domain by encroaching on the beaches

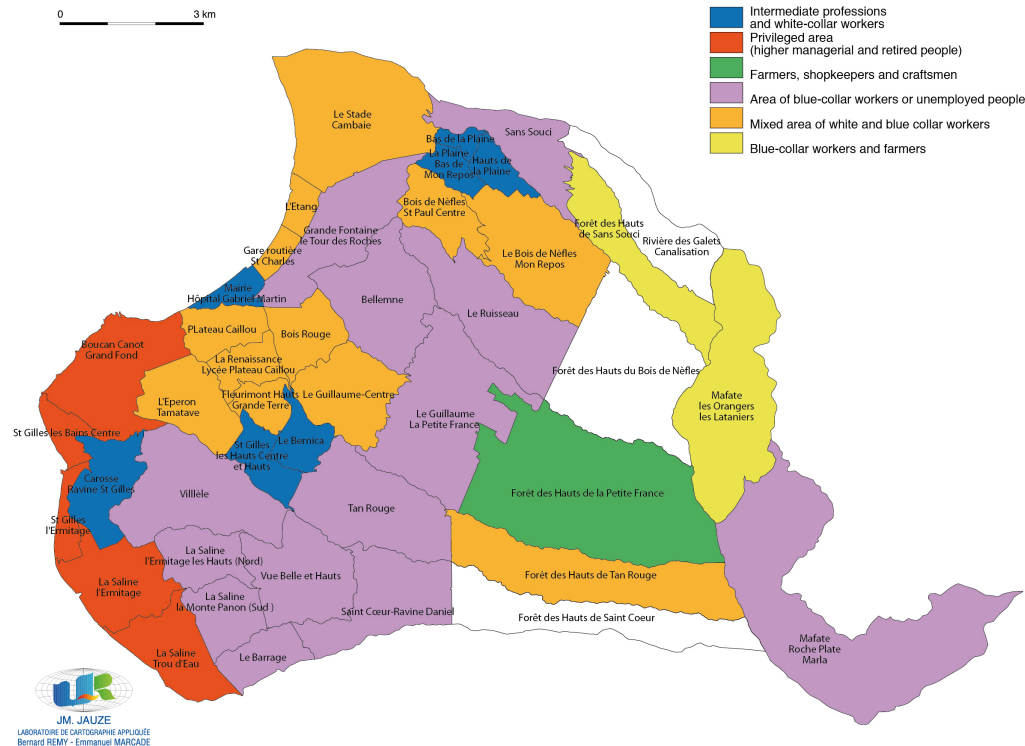


Fig. 7. Structure of Saint-Paul IRIS 2000 statistical block groups according to socio-professional category in 2008

(Fig. 5). Finally, conflict occurs between clubbers and those residing near places of entertainment, who complain about the noise and disturbances caused by nocturnal activities.

A dynamic economy, but a vulnerable monoactivity

Saint-Gilles represents annual income of €130 million from tourists, 4,000 jobs, 67 recreational activity providers, 110 restaurants, 15 bars, 11 nightclubs, 1 casino, 1 cinema, a third of the island's graded hotels, 42% of its visitor capacity, 50% of Reunion's tourism and not counting the shops and other tourism-dependent commercial services.

Although the resort is doing relatively good business, stakeholders need to remain vigilant in a situation which could deteriorate at any moment and jeopardize its dynamism, as evidenced by the shark attacks since 2011 and their negative effects on the beachside economy. In the same way, the island was memorably struck by the chikungunya outbreak in 2006 which had a severe impact on tourism.¹³ The resort suffered the full force of what was an unprecedented crisis, with losses amounting to millions of euros in the hotel sector as well as in tourism-related service provision. The episode at least had the merit of revealing the frailty of an economy dependent on the outside world and led some operators to review their strategy. Hoteliers and recreational activity providers are now targeting the local clientele via promotional campaigns.

Other threats loom over the resort's activities. "Saint-Gilles chokes on its own success" (Odit France 2008). A report on observed economic activity in the town centre reveals the following weaknesses: the inadequacy of the commercial offer

to a poorly-targeted clientele (outside tourists/local inhabitants), deterioration of the overall development of the district and its commercial facilities with a negative impact of product quality and diversification, a lack of continuity in the shopping strip, difficult access to shops owing to traffic and parking problems, flagging traditional sectors which are struggling to renew themselves and so on (Ccir 2010). The ageing commercial facilities benefit only from an economic rent, and are threatened by loss of attractiveness and the possibility that customers will now switch to other shopping districts thanks to the brand-new *Tamarins* expressway, especially the huge commercial area Savannah (Saint-Paul)-Le Port-La Possession, which is along the highway to Saint-Denis.

The image of the resort is deteriorating: "Is Saint-Gilles becoming Palavas-les-Flots 2?" "Saint-Gilles is dirty and poorly-lit", "the beaches must be cleaned", "tourists lack information", "there is nothing typical about the town's architecture or the restaurants or other activities on offer" (Odit France 2008).

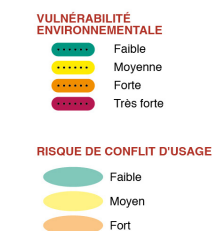
Worrying environmental impact

Coastal hyper-urbanization, economic development and the overcrowding of certain beaches with peaks of over 8,000 visitors in holiday periods and at weekends, have had significant repercussions on the environment.

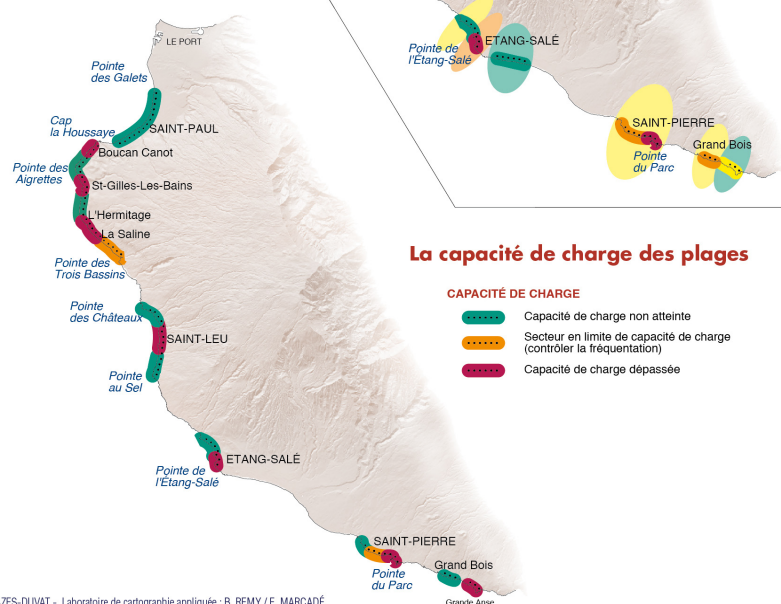
Proceeding from the notion of "load capacity," the threshold above which there is serious risk of irreversible damage to the environment and social climate, V. Cazes-Duvat estimates that in the west the capacity has already been exceeded in those areas under the highest anthropic pressure. In these zones, "the effect of pursuing poorly controlled growth would not only be to aggravate environmental problems (pollution, waste management, beach erosion) but also to lower the quality of life by depriving residents of highly valued recreational spaces" (Cazes-Duvat 2003). Examination of beach vulnerability and load capacity maps (Fig. 8) shows that in 2003 most of the resort's sectors had already

¹³ The chikungunya, an epidemic borne by the *Aedes Albopictus* mosquito appeared in 2004 in the Comoros archipelago, close to Reunion. It struck 40% of the population of Reunion in 2005-2006 causing very high fevers, pains and even deaths. Tourists avoided the island and hotels recorded an average 30% fall in occupancy rates, with some going out of business.

La vulnérabilité des plages

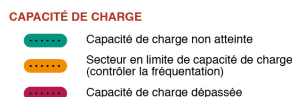


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V. CAZES-DUVAT - Laboratoire de cartographie appliquée : B. REMY / E. MARCADIÉ

La capacité de charge des plages



La vulnérabilité des plages – beach vulnerability

Vulnérabilité environnementale – environmental vulnerability

Faible - resilient
Moyenne – at risk
Forte - vulnerable
Très forte – highly vulnerable

Risque de conflit d'usage – conflict risk due to beach usage

Low
Medium
High

La capacité de charge des plages – load capacity of beaches

Capacité de charge non atteinte - negligible load capacity
Secteur en limite de capacité de charge – sector on the verge of achieving its load capacity (visitor number control necessary),
Capacité de charge dépassée - load capacity exceeded

Fig. 8. Vulnerability and load capacity of Saint-Gilles beaches in 2003



Fig. 9. Root-exposed filao trees on L'Ermitage beach, in danger of toppling

attained or exceeded it and that 85% of beaches, from the Pointe des Aigrettes (southern extension of Boucan Canot) to La Saline, were in a state of high vulnerability.

Many now urbanized areas, some on marshy ground, are regularly flooded during heavy rains or the cyclone season. The situation can be explained by the rise of the groundwater level

which is compounded by the problem of rainwater runoff no longer having a natural outlet to the sea.

A further problem is pollution of the lagoon, today verging on asphyxia. Herbicides and pesticides used in fields and gardens, lead-based anti-corrosion paints and anti-algae agents applied to boat hulls, domestic detergents in sewage water, sediments and terrigenous deposits are responsible for the deterioration of the coral reef. The observation of the coral bleaching phenomenon at La Saline-les-Bains gave an opportunity to sound the alarm. In addition, urban waste is responsible for the eutrophication of the lagoon. "Urbanization behind reef areas, with soil sealing, has led to an increase in volumes of rainwater runoff... stormwater pipes located outside the natural outlets of ravines pour polluted water directly into the zones behind reefs" (Ifreco 1998). The trampling of coral by bathers and other lagoon users does nothing to improve the situation.

The coral reef, which has been severely affected in places, no longer dissipates the kinetic energy of powerful southern or cyclonic swells which attack the dunes at the back of the beach, exposing *filao* tree roots (Fig. 9), causing the coastline to recede and endangering buildings.

The management of waste generated by heavy user frequentation also remains a major problem, as is the deterioration of public facilities.

The Municipality of Saint-Paul and the West Coast Utilities Group (TCO) are seeking to address these problems by means

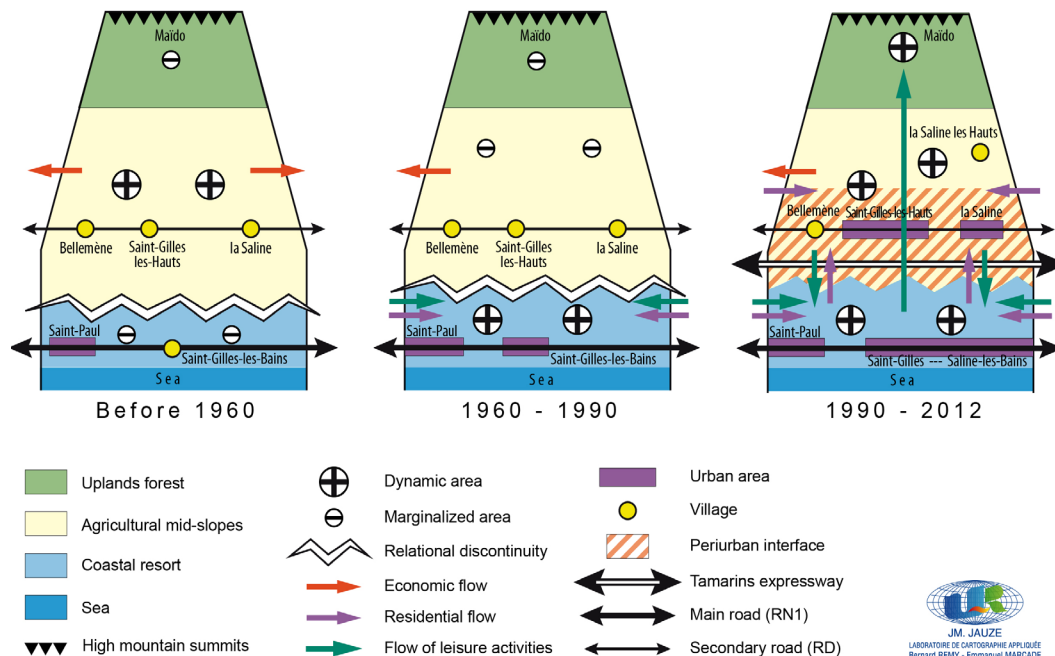


Fig. 10. Relations between the uplands and the lowlands and organization of the Saint-Paul territory

of regulatory tools (ZALM [Sea-related Development Zone] of the SAR [Regional Development Plan]), by creating appropriate structures (the semi-public resort company, the Marine Park¹⁴) or taking protective measures (bathing water quality control, a sewage treatment plant).

Conclusion

The spatial organization of Saint-Paul reveals a historic disconnect between the coastal resort and the agricultural Uplands of the interior. This situation has passed through three stages (Fig. 10). During the first, which lasted until the 1960s, the Uplands were of great importance to the town through its post-colonial plantation economy in contrast to the barely explored potential of the coast. The second, from the 1960s to the 1990s, saw the coast supplanting the Uplands thanks to its booming tourist and leisure economy. During the third, starting in the 1990s, the coast's excess population overflowed on to mid-slope farmlands. With this last period a periurban relation has, for the first time, arisen between the two zones, inciting developers to consider the question of the Uplands' place in the Saint-Paul tourist system and regional planning.

There have been attempts to develop tourism in these Uplands, based on the natural assets of Maïdo¹⁵ and the rural character of Petite France. The Maïdo Park Hotel opened in 1993, on 25 ha at an altitude of 1,500 m in a highly attractive setting. Yet

ten years later it went out of business, a victim of the proximity and competition of the coast although this failure occurred in a context when green tourism was still in its infancy.

Faced with fierce competition from neighboring islands like Mauritius and the Seychelles which have greater appeal as beachside destinations, decision-makers are now opting for a strategy enhancing complementarity between the coast and the interior. The traditional "oceanside" concept has been superseded by the "oceanview" or "ocean view balcony". The aim is to create leisure activities in the hinterland that are modeled on the South African *lodge* and *bush camp*. It is an interesting strategy which merits further development in the direction of blue/green (sea/interior) balance.

The strategy also arises out of the acknowledgement that visitors do not come to Reunion for its beaches, since better and cheaper options can be found elsewhere. Reunion's real asset is its diversity as the island of "multiple facets," "grand spectacles" and a generous, grandiose nature. Reunion is thus repositioning itself as a tourist destination, with emphasis now placed on its World Heritage label. In this context the Saint-Paul Uplands, as they await recognition and revitalization and despite the ecological disaster of Maïdo,¹⁶ are acquiring a new value which can usefully be combined with the strengths of the lowlands to attract outside visitors and achieve the necessary rebalancing of the municipal territory.

¹⁴ The Marine Park, created in 1997, has the main purpose of protecting the lagoons of the West. Its mission, inter alia, is to inform and raise public awareness of marine environmental protection and the dangers of its deterioration.

¹⁵ Le Maïdo's visitor-count makes it the island's top tourist attraction, with over 300,000 visitors per year.

¹⁶ Cf. note 9.

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