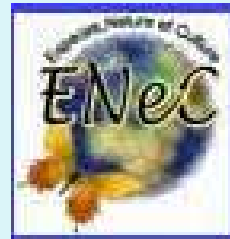


# Mental maps of dengue in Noumea and Papeete

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<http://www.irdes.fr/Enrghi2010> - [enrghi2010@irdes.fr](mailto:enrghi2010@irdes.fr)



# What impact?

## Disease of dengue

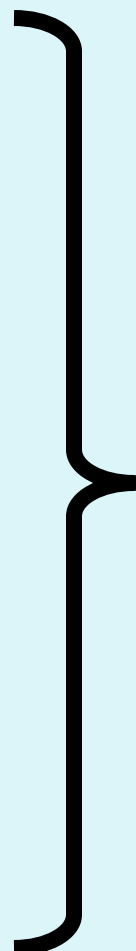
A topic which concerns 100 millions persons / year

## Noumea and Papeete

2008-2009 an important epidemic of dengue : more than 9000 patients, especially young people

## Youth population

More sensitive ? Most affected ?  
25 000 deaths per year, mostly young people under 15 years  
(dengue hemorrhagic fever)



**Issue :**

**Youth = future**

**Improve their knowledge**



**a better control of the cost of health**

# Flashback to the disease



Vector: a mosquito  
*Aedes aegypti*  
and *Aedes Polynesisensis*  
in Tahiti

Disease transmitted to humans through the bite of the mosquito

Breeding conditions of the mosquito:  
Climate = heat (tropical climate) + water(season)

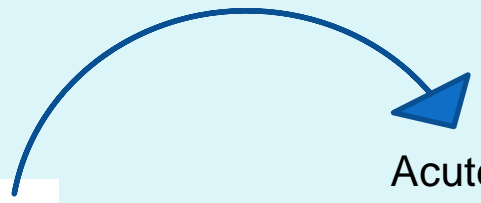


Baie des Citrons, Nouméa  
M.J.S.-E., 2009

Rain water in puddles,  
plastic water bottle, containers  
= mosquito breeding sites



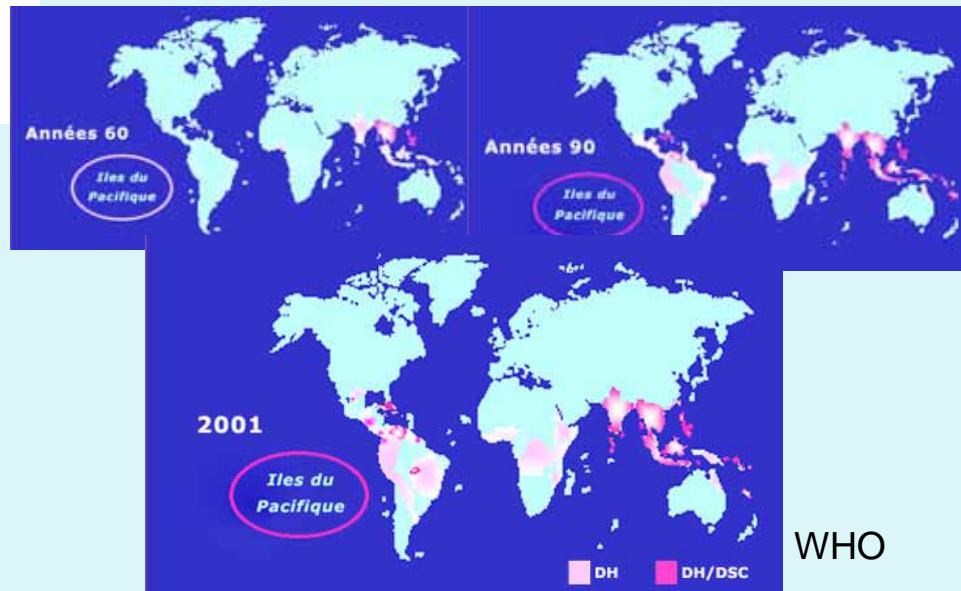
Contamination



Acute infectious disease :  
a benign " tropical flu",  
but existence of severe forms

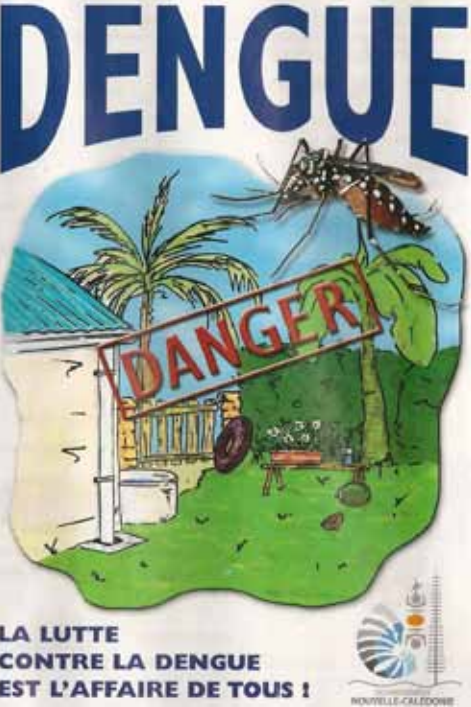
No vaccine

Epidemic



## Authorities

Government: Department of Health and Social Affairs (DASS)



Flyer in New Caledonia

## Media :



30/05/2009  
Dengue epidemic "booming" in Tahiti

## Curricula in high school

Appropriate programs in Geography and History in New Caledonia, and in Tahiti

The impact of major diseases (leprosy, plague, tuberculosis, **dengue fever** ...)

# How are elaborated the representations of the disease among students according to the fact that they have much information ?



# Who has been questioned ?

- Students in junior high school and in high school in 7 schools in the capital in New Caledonia and Tahiti :  
Noumea and Grand Noumea and Papeete and Grand Papeete
- Students of junior high school : six grades  
Students of high School : first class and twelfth grade in S (science) and ST2S (socio-medical)

Papeete			Noumea		
	Effectif	%		Effectif	%
Junior high school	21	16,2%	Junior high school	83	57,2%
High school	109	83,8%	High school	62	42,8%
<b>Total</b>	<b>130</b>	<b>100, 0%</b>	<b>Total</b>	<b>145</b>	<b>100, 0%</b>

- Age: 10-20 years old
- 13 classes surveyed: 5 in junior high school and 8 in high school

**Further investigation : to create a map**

**The question for students was:**

**Can you locate the places at risk for  
dengue ?**

**( At different level : city, province,  
municipality)**

# Methodology and data

A multiscalar approach

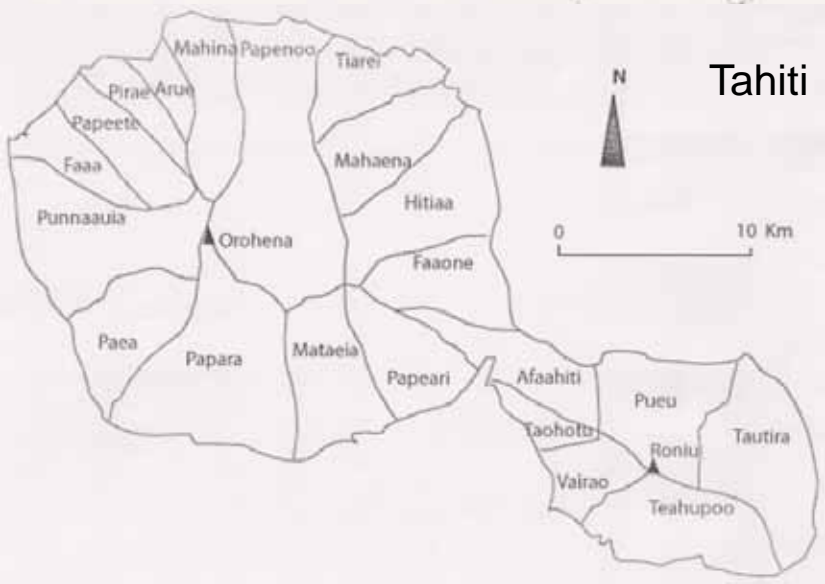
- Municipalities
- Regional capitals : Noumea, Grand Noumea and Papeete, Grand Papeete



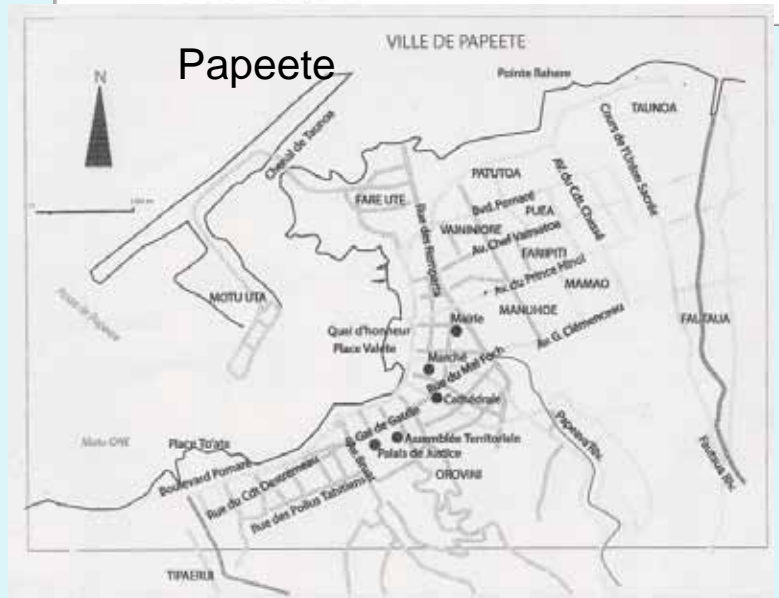
New Caledonia



Noumea

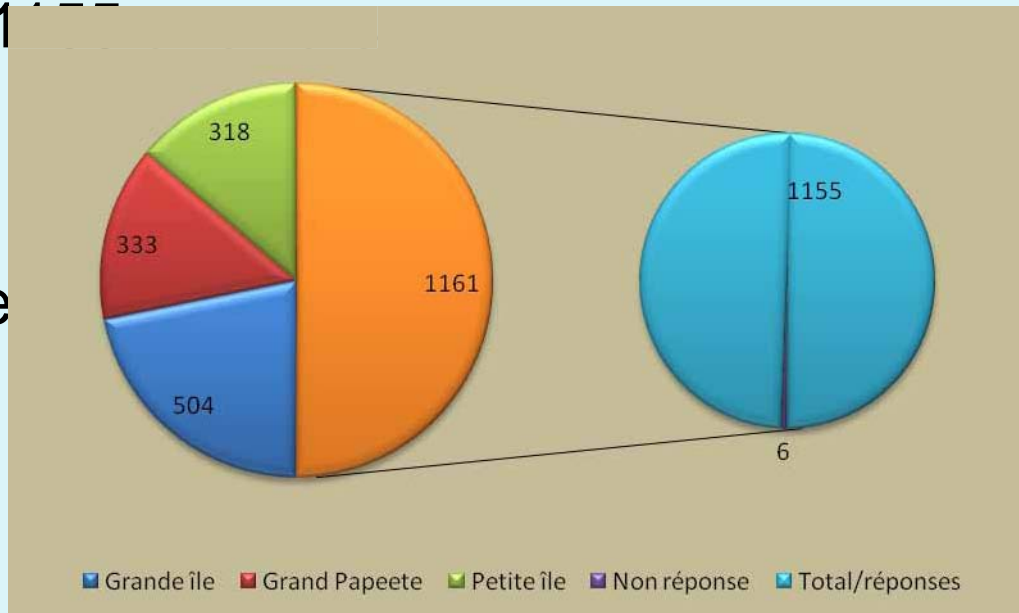


Tahiti



Papeete

- Students could choose around 33 or 12 municipalities on a map grid
- In Noumea, about 145 students = 3200 answers
  - 1625 responses from 33 municipalities in New Caledonia
  - 1575 responses from 26 districts of the city of Noumea and the Grand Noumea
- In Papeete, 130 students = 1155 answers
  - 21 municipalities in Tahiti
  - 37 districts, places of the city of Papeete and Grand Papeete

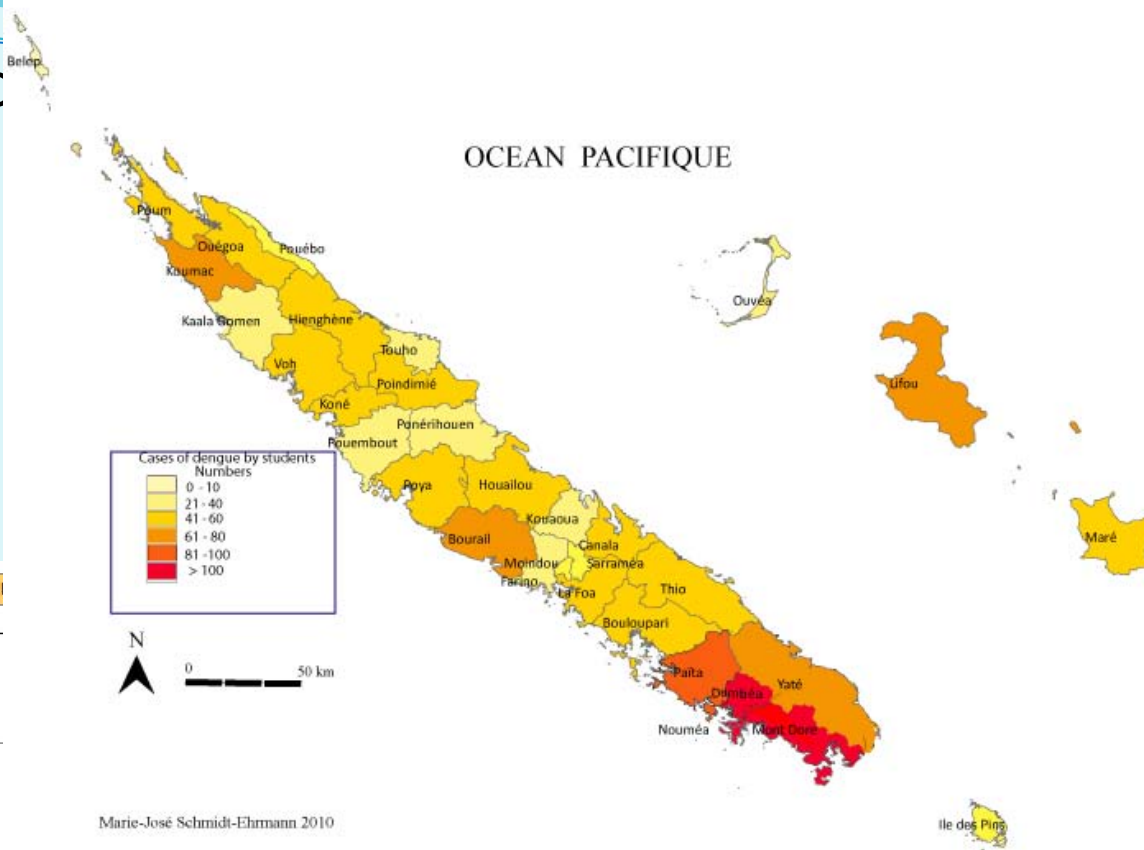
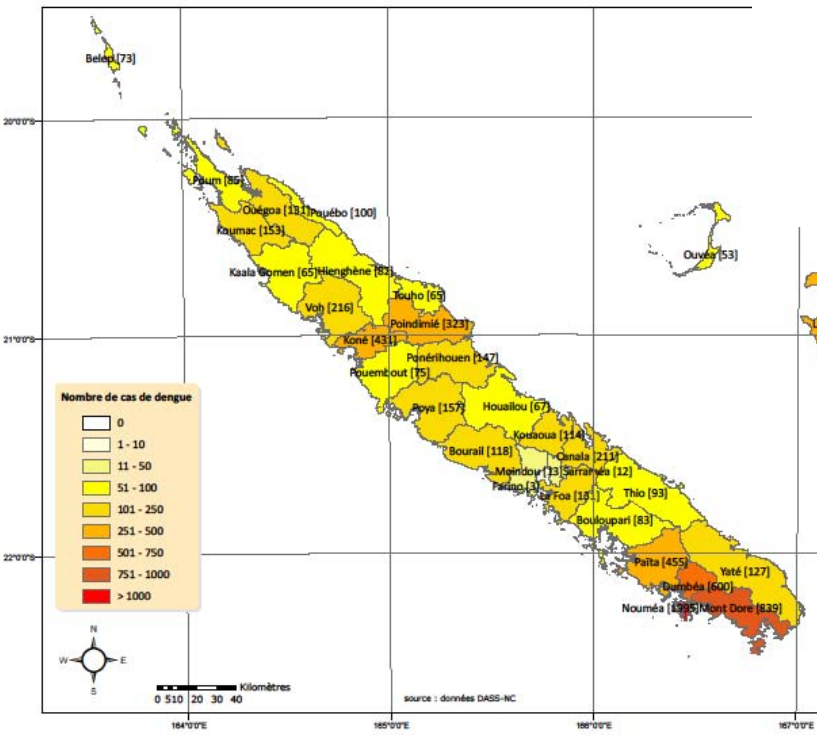




Perceived

# Maps of New Caledonia

Répartition des cas de dengue du 01/09/2008 au 27/04/2009 (14h03) -



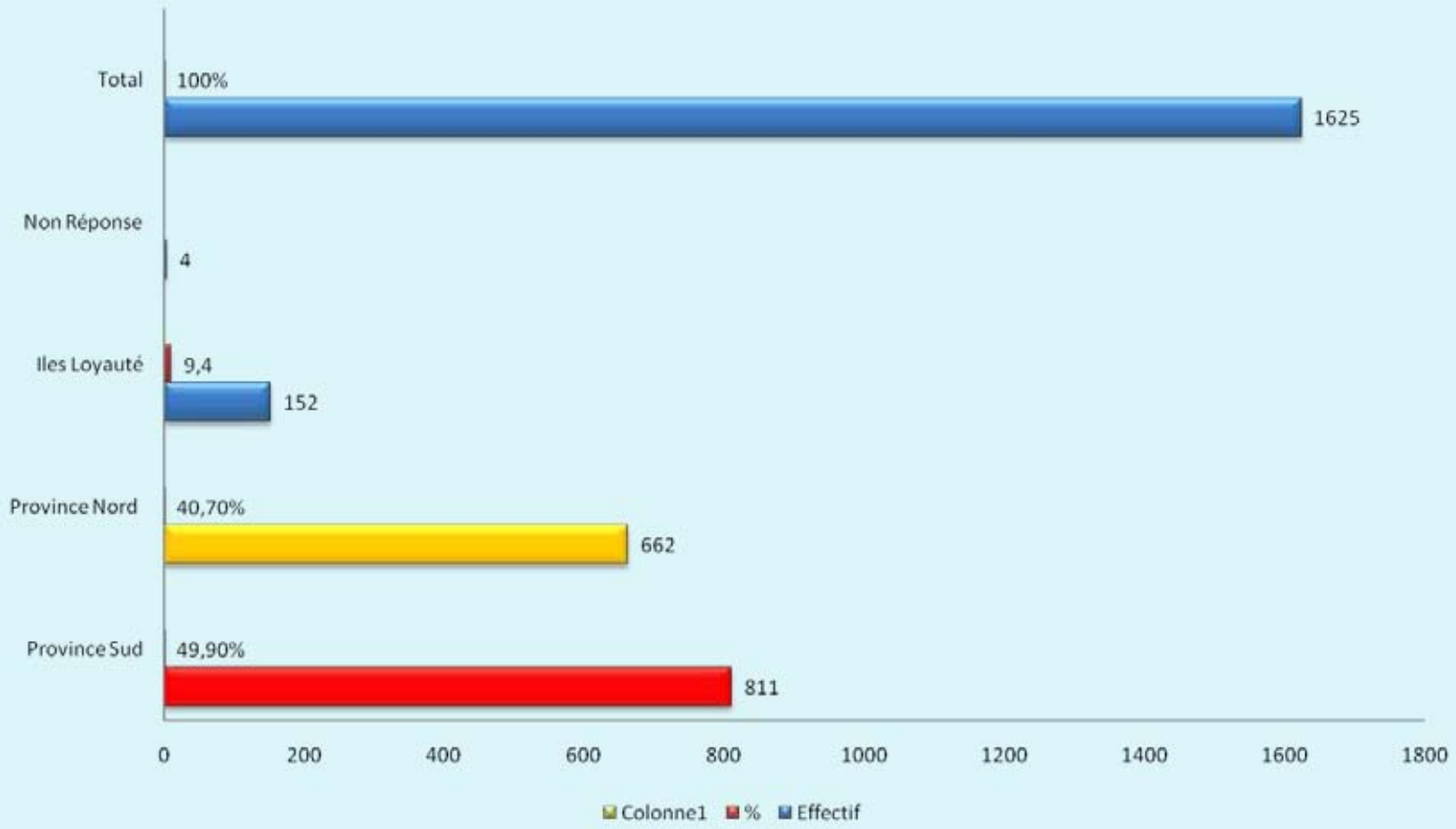
Marie-José Schmidt-Ehrmann, juin 20

# Reality

## The perception of students

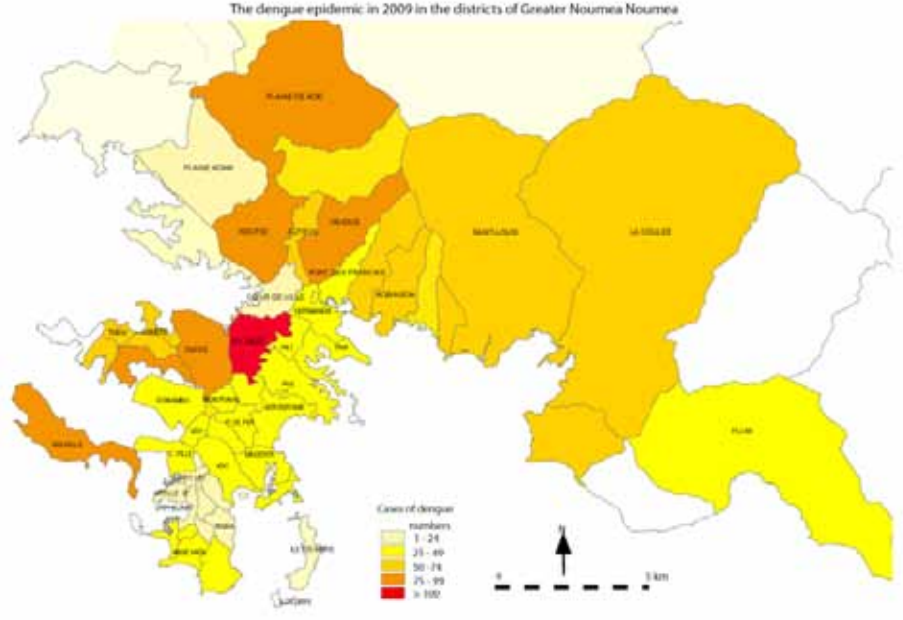
1. The incidence of dengue appears to be extended throughout the territory. However, in detail, we can see shades of intensity, between the impact of a municipality to another.
2. Urban space in particular, the capital Noumea ( 97 579 people) is the site focusing on more cases
3. Secondary outbreaks are situated at the same level in the Province of North (45 137 people), South ( 183 007 people) and in Loyalty Islands ( 17 436 pax.)

#### 4. The distribution of dengue cases according to the three Provinces in New Caledonia (245 580 people)

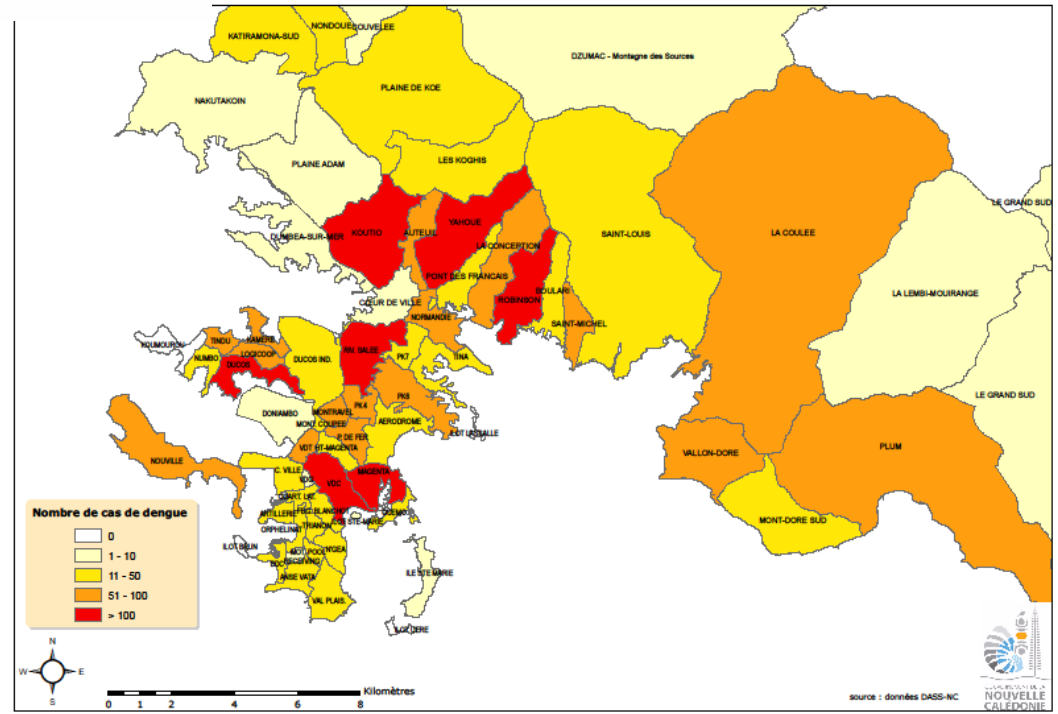


Perceived

# Maps of Noumea and Grand Noumea



Nouméa : répartition des cas de dengue du 01/09/2008 au 24/04/2009 (08h06) - Nombre de cas : 3350/7303



Marie-José Schmidt-Ehrmann 2009

Reality

- The map shows that there is a major outbreak of epidemic dengue in Noumea and especially in Salt River
- According to the students Grand Noumea is the most affected place because of the importance of population in this area.
- The neighborhoods of the southern part of the city, such as Anse Vata, has a rate of sick people that corresponds to the reality of the situation : slightly affected

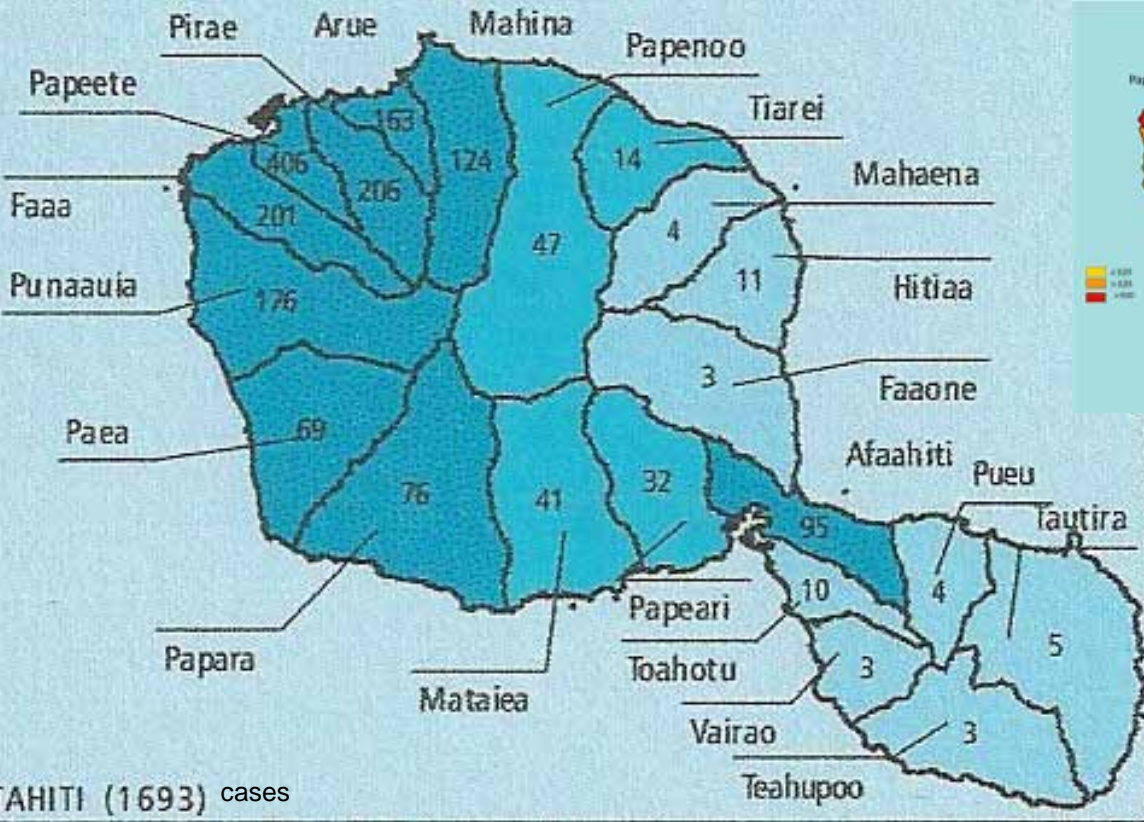


# Maps of Tahiti

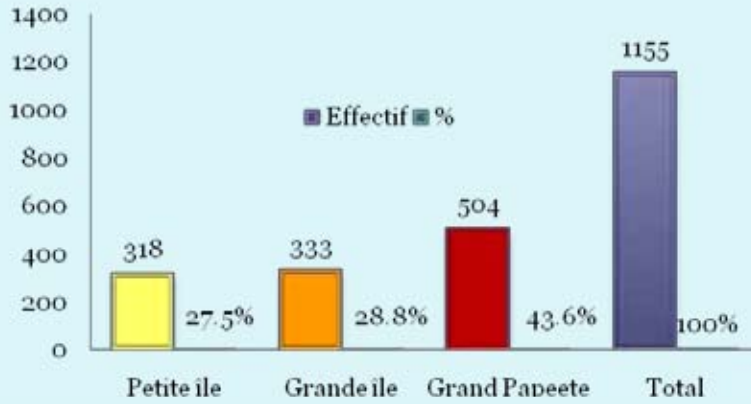
Perceived



Reality  
↓



Perceived



Geographic repartition of dengue cases in 2009, Source : Direction de la Santé de Polynésie française et Institut de veille sanitaire

- The map shows that Papeete (26 050 people) and the Grand Papeete are the most affected areas
- According to the students the south east " Petite île" is also affected although it is not the case in reality
- South west and south of "Grande île" is considered highly at risk by the authorities and least by the students

- Students in grade sixth : difficulty to locate their home and their school on a map
- The nearby environment of the students remains a landmark
- Incidence rate increased : a difference in the perception of socio-spatial epidemic
- Students form their representation in reference to a living space, the space of proximity, in relation to their family and friends. In Noumea and Papeete, some students are boarders and their reference is in relation to their community, town, tribe.

# Conclusion 1

- In most cases, the young audience locates major epidemic outbreaks, but gaps still remain.
- Identification of risk areas :
  - the range of the mosquito is known between 50-100 m.
  - 9/10 people in their daily mobility are aware of risk areas between the workplace, schools and housing
  - 1/10 person is not informed of the risk because the mosquito can spread in a few miles when the winds are favorable.

# Conclusion 2

This disease is trivialized or "neglected" (WHO)

How to improve the information campaign?

Geography allows an analysis of realities and provides tools for students to interpret a situation of risk and the discourse of different actors.



**THANK YOU**

©Marie-José Schmidt-Ehrmann , août2009, Anse Vata à  
Nouméa



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