

# « Cap-Haïtien » or « how to 'construct' a flood risk in a decade »

Gracia Joseph GRACIUS<sup>1,2</sup>, Pierre OZER<sup>2</sup>

<sup>1</sup> Institut Inter-Américain de Coopération pour l'Agriculture, Port-au-Prince, Haiti, [igracia910@yahoo.fr](mailto:igracia910@yahoo.fr)

<sup>2</sup> Département des Sciences et Gestion de l'Environnement / Hugo Observatory, Université de Liège, Belgium, [pozer@ulg.ac.be](mailto:pozer@ulg.ac.be)

## Introduction

Cap-Haïtien is a town situated in northern Haiti that is experiencing an unprecedented increase in flooding. While some observers are tempted to blame the flooding to the consequences of climate change, we try here to demonstrate that it is the total lack of urban planning, environmental degradation, lack of good governance and rural exodus which are the main components creating this exceptional risk.

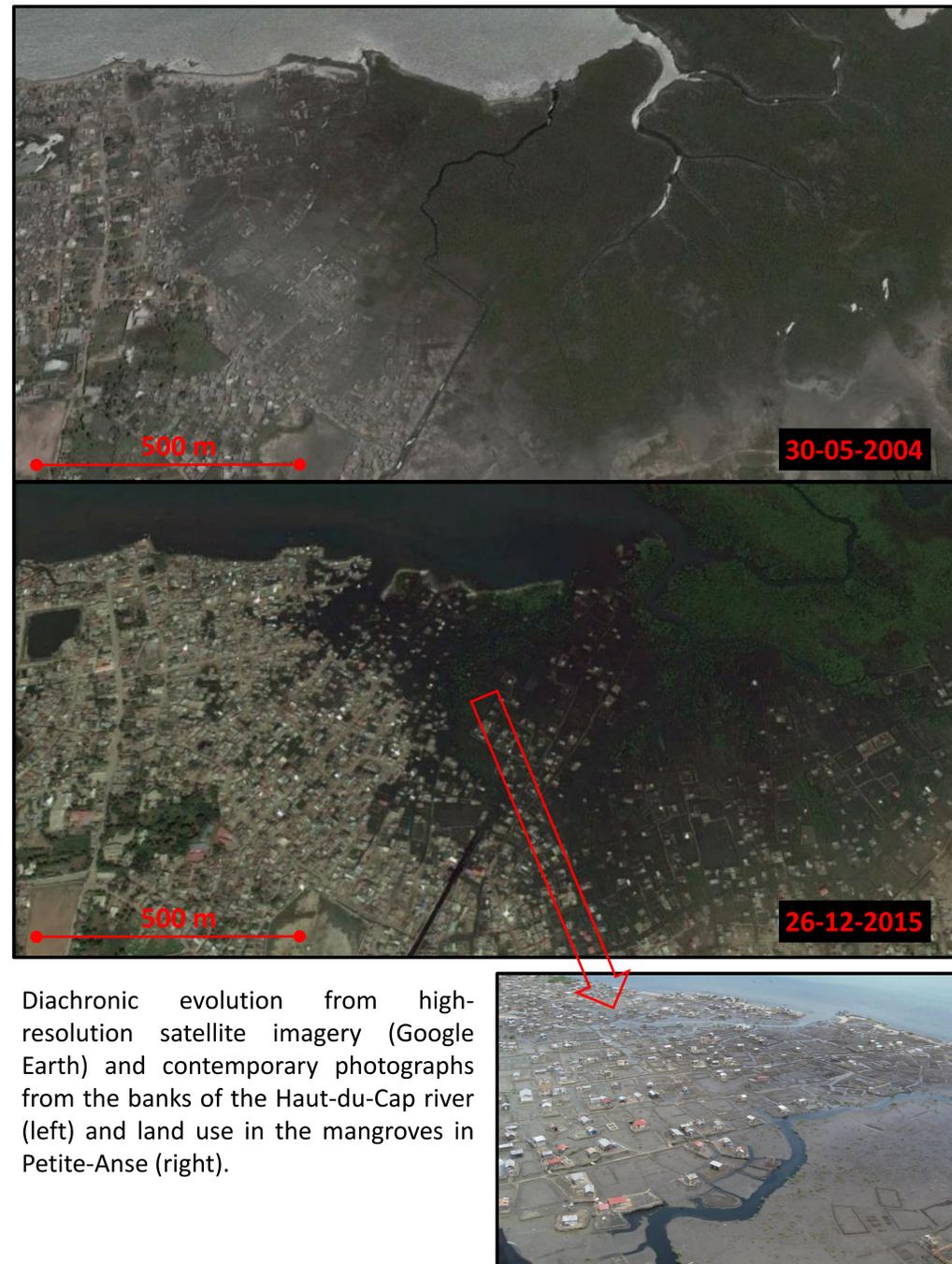
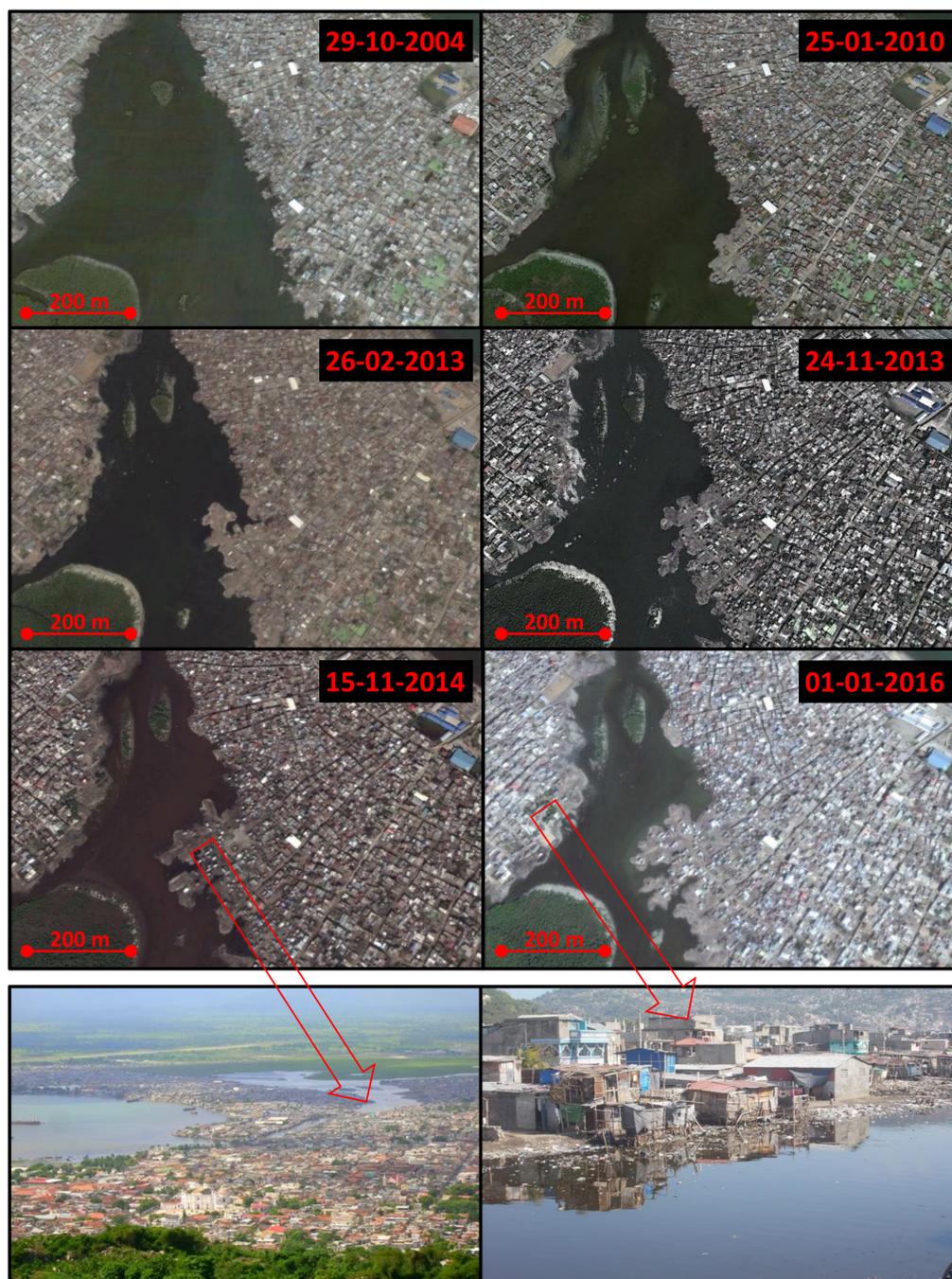
## Objectives

- Analyze the evolution of urban expansion in two wetlands (Haut-du-Cap river and the mangroves in Petite-Anse) from 2004 to 2016.
- Assess the perception of flood risk by local people.

## Methods

- The urban expansion dynamics is analyzed using 23 images with very high spatial resolution available in open access on Google Earth between 2004 and 2016.
- Surveys were administered to 50 respondents living in newly parceled zones (see below) during a field mission in April 2016.

## Results



Diachronic evolution from high-resolution satellite imagery (Google Earth) and contemporary photographs from the banks of the Haut-du-Cap river (left) and land use in the mangroves in Petite-Anse (right).

These illustrations show the dynamics of land use in Cap-Haïtien over ten years. Urban sprawl is mainly carried on embankments in the estuary of the Haut-du-Cap river or to the detriment of the mangrove. Consequently, these new residents are periodically flood victims. Questioned on the ground, it appears that 80% of these people are come from rural exodus and have settled in Cap-Haïtien in the last decade. 82% and 60% of the people live respectively below the poverty line (< 2 USD / day) or in extreme poverty (<1 USD / day), and 42% are illiterate. Therefore, the ignorance of flood risk, poverty and low education levels are all parameters involved in the vulnerability of these new inhabitants. Thus, 78% of respondents claim to have been dramatically impacted by flooding at least three times since their arrival (i.e. since 2004).

## Conclusion

Field surveys revealed that most of the newly settled people in some areas highly exposed to the risk of flooding in Cap-Haïtien come from neighboring rural areas. Their movements are motivated by the aspiration of "a better life". However they were quickly disillusioned because the recurrent floodings plunge these populations in an aggravated state of insecurity. As for the authorities, they are guilty of not applying the national standards for construction in flood risk areas and the lack of regional planning policy endangers the survival of hundreds of households per year. In this case, it seems evident that the most frequent flooding is not due to climate change but rather that chaotic governance creates all conditions for the "construction" of the risk because of the inhabitability process.