



## At the edge of a delta : the second bridge over the Wouri

Geotechnical expertise

2014 - 2015



**CAMEROON REP -  
Douala  
Client  
SOGEA SATOM**

### Highlights

Bridge 800 m long with  
135 m spans  
5 road lanes and a railway  
line  
Soil reinforcement with rigid  
inclusions



### The Project

The second bridge over the river Wouri in Cameroon includes five road traffic lanes and a railway line. It is 800 m long with 135 m major spans.

The site is located in the Wouri river delta (equatorial climate). The top soil layers consist of highly-compressible estuarine clays and sands, with local deposits of organic content.

#### Key features

- Study of the embankments
- Study of their interaction with the bridge supports
- Solution of soil reinforcement with rigid inclusions

### Our Services

As part of the construction of this project, TERRASOL carried out an expert assessment assignment for contractor SOGEA-SATOM to study the construction of the embankments and their interaction with the bridge supports.

In the context already described, settlements leading to a level difference between the abutment and the access embankment may occur after a few years of operation, and it is important to properly predict this settlement, particularly in the transition and connecting zones.

In practice, it was necessary to ensure compatibility of settlements between the rigid structure (bridge) and the flexible structure (embankment). The selected solution was ground reinforcement by rigid inclusions.

This technique limited differential settlements without involving preloading, which would have complicated the construction phasing. Conversely, the preloading technique was applied to the standard part of the embankment. A test plot was used for precise evaluation of the magnitude and development of the settlements in an extremely unfavourable geological context.

Started in 2013, the construction of the second bridge over the Wouri is scheduled for completion in 2016.