

Title of the project:

To surf or not to surf: Evaluation and design of a coastal surf beach in the Bio Bio region of Chile

Assignment no.: 18.18

Internal/external:

External, Twynstra Gudde

Head graduation committee:

Prof dr K. Wijnberg (UT)

Daily advisor:

Dr. M Brugnach (UT)

Dr M Pradena(University of Concepcion & UT)

Name(s) of participating companies or institutes:

Departments of ports. Ministry of Public Works of Chile

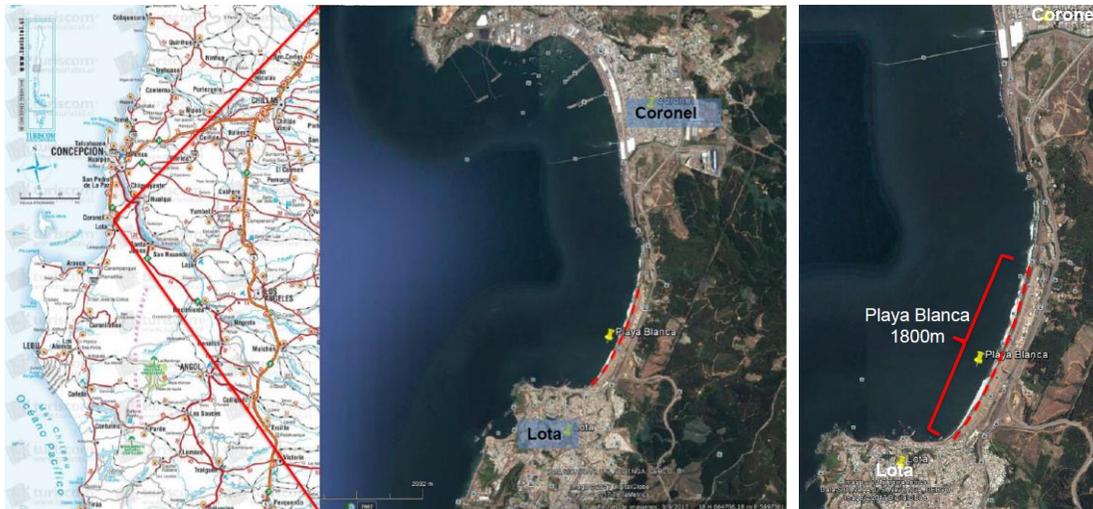
Start of the project:

As soon as possible

Short description and objective of the project:

As Chile is a country with more 4000 km of coast, the needs for coastal management and infrastructures are many. As part of an ongoing collaboration between the University of Twente and the University of Concepcion (Chile), we are delineating some MSc thesis projects, that offer students the possibility to work for a period of time in Chile developing solutions for the multiple local challenges the coast presents.

Problem description. Playa Blanca (white Beach) is a popular beach in the Bio Bio region of Chile (see map below) with a potential to develop sports like surf, body board, stand up paddle, during the different seasons of the year. Presently, Playa Blanca does not have a quality wave for practicing these sports in a safe way. And we expect that doing so could have a considerable social impact because Playa Blanca is located in a highly populated region of Chile, where people generally does not access to these sports.



To reach the objective of this research project, the student must model different scenarios of sediment transports, and their effect in the physical behaviour of the beach, evaluate the technical feasibility of the alternative solution in the Chilean context, including their cost of construction and maintenance and their long term effects on the cost. This analysis must also be accompanied by a succinct evaluation of the social impacts that these developments may have. This study must take into consideration the state-of-the-art in this type of development.

At the end of this work, the students must hand a recommendation about the feasibility of a beach development to the Chilean Department of Ports of the Ministry of Public works.

More information:

<http://www.jcronline.org/doi/pdf/10.2112/07-0958.1?code=cerf-site>

<http://www.coastalmanagement.com.au/artificial-surfing-reefs/>

<http://www.surfscience.com/topics/waves-and-weather/waves-101/point-reef-or-beach-break/>

<http://www.surfscience.com/topics/waves-and-weather/wind-and-weather/artificial-surfing-reefs/>

http://repositorio.Inec.pt:8080/xmlui/bitstream/handle/123456789/1003865/Journal%20of%20Waterway_Port_Coastal%20and%20Ocean%20Engineering_ASCE_2012_Mendonca_et_al.pdf?sequence=1

http://thereefjournal.com/files/17_Hearin.pdf