

**Chilean Port Developments**  
Overview of the developments in the Chilean port sector  
and the cases of Mejillones and Bio Bio

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**Abstract**

With a coastline extending over more than half the west coast of South America, the port sector is of considerable importance on the Chilean economy. In the last decade Chile has gone through a major reform in the port industry, and a considerable number of ports is privatised. This paper discusses the recent Chilean national port developments and focusses on the port project of Mejillones and the greenfield port project of Bio Bio.

In 1996 CSAV, a Chilean shipping company, required assistance for a scouting study for a new port location in Chile. Several locations were visited and a recommendation was made to locate the new port just south of the Rio Bio Bio, close to Concepción and 500 km south of Santiago.

As at that time the Chilean port privatisation process had not yet started it was considered by CSAV to build and operate their own multi purpose port. Puerto Bio Bio SA, in which CSAV participated, awarded the concept design and preliminary design in 1997. A design was made for an inland port with a dredged basin, two rubble mound breakwaters and ca 2 km of quays.

The port of Mejillones, near Antofagasta in the northern part of Chile, is being developed by Complejo Portuario Mejillones [CPM]. The initial throughput of the new port will consist of copper, containers and general cargo. Future expansions and the provision for other commodities are foreseen in the following phases of the port master plan.

An alternative design was developed for the Chilean port operator SAAM (a subsidiary of CSAV). The future port location in the Bay of Mejillones is sheltered to the south-west but open to the Pacific Ocean in north-east direction. As quite some uncertainty existed in the design wave height, a port layout was designed which would not be vulnerable to this uncertainty.

After analysis of the future cargo flows it was decided to make a layout with a phased approach. Initially two berths would be constructed and at a later phase additional berths could be constructed. The tender was submitted by SAAM in July 1999.

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## Introduction

Chile has a coastline of more than 5000 km length on which ca. 70 ports are located. The throughput in 1996 was about 70 million tons of cargo. Main container ports are Valparaíso and San Antonio with a throughput of more than 200,000 TEU each in 1997 (P.Smith, 2000). In the past a large number of the ports were government owned. In the recent years quite some development is taking place in the Chilean port sector as several ports are being privatised and new ports are being developed.



**Figure 1 Overview of Chilean coastline**

Figure 1 shows an overview of the Chilean coastline. The main ports from north to south are: Arica, Iquique, Antofagasta, Coquimbo, Valparaíso, San Antonio, Talcahuano, Concepción, Puerto Montt and Punta Arenas.

Already in 1905 Dutch engineers had involvement in port construction in Chile. Two engineers went to Chile to construct the breakwater and quay walls of the port of Talcahuano near Concepción. The design used the same type of caissons which were proposed in 1901 by the Dutch professor Kraus for the port of Valparaíso. (T.J. Mesman, 1977)

In 1996 the largest South American shipping company CSAV was developing plans to construct a port near Concepción. At that time it was not clear when port privatisation would start. CSAV has its own port operating company SAAM, which operated in state owned ports and wanted to expand its activities. A scouting study

was done to determine the best location for a new multipurpose port. After a location just south of Concepción (Puerto Bio Bio) was selected a preliminary design was prepared. Just after design completion the Asia crisis started. When the crisis was over the Chilean government began to privatise the major Chilean ports. SAAM won the bids for the San Antonio South dock and a terminal at San Vicente, close to Concepción. Therefore there was no urgent need to construct a new port anymore, and the Puerto Bio Bio project was shelved.

In 1998 several consortia were invited to prepare a bid for the development of a new port at Mejillones just North of Antofagasta. A subsidiary of the Chilean mining company Codelco, Complejo Portuario Mejillones S.A. (CPM), was tendering the project on a Built Operate and Transfer basis. The port is intended to replace the port of Antofagasta. There are plans to close the port of Antofagasta and redevelop it for real estate, as it is located in the centre of the town. The first phase of the new port of Mejillones will mainly be a copper export port, for the copper industry located in the same region. A container terminal is planned as future development. The tender for the first phase port development was to be awarded to the consortium which would propose the lowest handling tariff per ton of copper.

Bidders were invited to bid for a Reference Design (Arcadis, 1998) and prepare a bid based on their own alternative design. An alternative design was prepared for SAAM and engineering was done to provide sufficient detail to the Reference Design to be able to prepare cost estimates.

Three consortia finally put in a bid in July 1999. Unfortunately SAAM was disqualified because it proposed a phased construction with initially 2 berths only, while CPM said it wanted three berths in the first phase of port development. As at the same time SAAM won the bids for San Antonio and San Vicente, it was decided not to take further action on the Mejillones project. The contract for the port of Mejillones was awarded in October 1999 to the consortium of Ultramar and Belfi, a Chilean port operator and a Chilean contractor. However, the consortium has had difficulties in securing a sufficient number of contracts for cargo handling.

### **Puerto Bio Bio**

During the scouting study for the site for a new port for CSAV in 1996, the following locations were considered (from North to South):

1. Bahía Concepción, just north of Talcahuano
2. Bahía San Vicente, west of Puerto San Vicente
3. Lomas Coloradas, just south of the Río Bio Bio mouth
4. Bahía Coronel, 50 km south of Concepción

The four locations are shown in figure 2.

Bahía Concepción is a natural bay very well sheltered from offshore waves. However, several ports are already located in this area. The best location in this bay would also interfere with military sites.

