

## Layouting Phase II of New Priok Using Adaptive Port Planning Frameworks

**Authors :** Mustarakh Gelfi, Tiedo Vellinga, Poonam Taneja, Delon Hamonangan

**Abstract :** The development of New Priok/Kalibaru as an expansion terminal of the old port has been being done by IPC (Indonesia Port Cooperation) together with the subsidiary company, Port Developer (PT Pengembangan Pelabuhan Indonesia). As stated in the master plan, from 2 phases that had been proposed, phase I has shown its form and even Container Terminal I has been operated in 2016. It was planned principally, the development will be divided into Phase I (2013-2018) consist of 3 container terminals and 2 product terminals and Phase II (2018-2023) consist of 4 container terminals. In fact, the master plan has to be changed due to some major uncertainties which were escaped in prediction. This study is focused on the design scenario of phase II (2035- onwards) to deal with future uncertainty. The outcome is the robust design of phase II of the Kalibaru Terminal taking into account the future changes. Flexibility has to be a major goal in such a large infrastructure project like New Priok in order to deal and manage future uncertainty. The phasing of project needs to be adapted and re-look frequently before being irrelevant to future challenges. One of the frameworks that have been developed by an expert in port planning is Adaptive Port Planning (APP) with scenario-based planning. The idea behind APP framework is the adaptation that might be needed at any moment as an answer to a challenge. It is a continuous procedure that basically aims to increase the lifespan of waterborne transport infrastructure by increasing flexibility in the planning, contracting and design phases. Other methods used in this study are brainstorming with the port authority, desk study, interview and site visit to the real project. The result of the study is expected to be the insight for the port authority of Tanjung Priok over the future look and how it will impact the design of the port. There will be guidelines to do the design in an uncertain environment as well. Solutions of flexibility can be divided into: 1 - Physical solutions, all the items related hard infrastructure in the projects. The common things in this type of solution are using modularity, standardization, multi-functional, shorter and longer design lifetime, reusability, etc. 2 - Non-physical solutions, usually related to the planning processes, decision making and management of the projects. To conclude, APP framework seems quite robust to deal with the problem of designing phase II of New Priok Project for such a long period.

**Keywords :** Indonesia port, port's design, port planning, scenario-based planning

**Conference Title :** ICSBIE 2017 : International Conference on Sustainable Building and Infrastructure Engineering

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** July 27-28, 2017