

3. Co Chien Estuary construction project

a. Location of investment: Ben Tre province

b. The necessity of investment

In the Decision No. 4291/QD-BGTVT by the Minister of Transport dated 24 December 2013 on approval of the development planning of river sea transport to 2020 and orientations upto 2030, the targets were defined as below: "Maximize existing infrastructure, gradually upgrade to promote river sea transport, constantly improve the capacity and quality of transport services with reasonable prices in order to gradually expand market share of river transport".

Recently, the Ministry of Transport issued the Decree No.2415/ QD-BGTVT dated 30 June 2014 and No.3365/ QD-BGTVT dated 05 Sep 2014, No.3733/ QD-BGTVT dated 10 March 2014 which publicized coastal waterway routes from Quang Ninh to Quang Binh, from Kien Giang to Binh Thuan and from Quang Binh to Binh Thuan; Inland waterway vehicles which were granted VR-SB standard like cargo carriers would be allowed to operate on coastal routes among coastal areas in order to reduce pressure for the road transport, lower transport cost and expand market share of river sea transport. Therefore, upgrading the estuary areas, particularly the navigation channel of Co Chien estuary is significant to achieve the mentioned objectives and orientations.

For Co Chien estuary, the Ministry of Transport issued the Document No.1082/ BGTVT dated 04 February 2013 determining that Co Chien estuary is a national inland waterway coastal line of special grade which was currently shallow and prevented navigation. Therefore, the Ministry of Transport encouraged upgrading the estuary in the form of investment socialization.

On 20 November 2013, the Ministry of Transport issued the document No.9880/ BGTVT approving the category of dredging locations in combination with the use of dredged products including Co Chien estuary (Ben Tre, Tra Vinh).

To sum up, the planning of upgrading Co Chien estuary in the form of socialization of investment is essential and appropriate to the Ministry of Transport's planning orientations, policies and decisions.

c. Objectives of the project

To renovate and upgrade the navigation channel of Co Chien estuary to special waterway grade to allow sea-river ships of upto 5000 DWT to throughput with the depth for sailing is H_{\min} 6,0m.

d. Preliminary assessment on current status of the project

Co Chien river is a distributary of Tien river, flowing through the provinces of Vinh Long and Tra Vinh, the length from the confluence with Tien river to the sea is 109km. Co Chien river flows into the sea via 2 main estuaries: Co Chien of Ben Tre province and Cung Hau of Tra Vinh territory. It is one of the significant inland waterways routes in the Mekong Delta region, according to the list of inland waterway routes as publicized by the Ministry of Transport in the Decision No.970/ QD-BGTVT dated 15 April 2009.

The natural width of the river is 600 -: 850m.

The channel width used for waterway transport is about 140m.

The average height of the channel bottom is about -4,0m (Based on the Navigational Chart System).

According to the master plan on inland water transport development to 2020 and orientations toward 2030 as approved in the Decision No. 1071/ QD-BGTVT dated 24 April 2013:

+ Co Chien Inland waterways route is considered special grade with 109 km long.

In which:

+ Section from Co Chien estuary to the confluence with Tra Vinh Channel is grade I, the length of 46 km;

+ Section from the confluence with Tra Vinh Channel to the confluence with Tien River is defined special grade, the length of 63 km.

Across the river, there are 5 large ferries (carry cars and trucks) and 5 cross-river wharfs (excluding some transverse wharfs of inhabitants).

Co Chien Bridge on the National Highway No.60 (connecting Ben Tre and Tra Vinh province, about 3.6km from the ferry terminal toward the downstream) officially went into operation from 16 May 2015 with the main technical specifications as follows:

+ Length of 1.599m with 24 pre-stressed concrete clear spans.

+ Width of 16m, 04 lanes, grade-III of delta standard.

+ Navigable clearances: $H = 25,0\text{m}$, navigable aperture $B = 120\text{m}$.

The average density of about 1.000 visits/ day last five years, the cargo throughput of nearly 600 thousand tons/ year are mostly from small waterway vehicles operating inter-provinces and inter-districts.

Co Chien estuary (also known as Bang Con estuary) with the width of about 900 - 1200m. The main flow via the estuary is separated by many isles and shoals. For a long time not to be dredged, waterway ships of large tonnage, especially sea-river ships which entry/ depart Vinh Thai port - Vinh Long and other ports along the river had to navigate to the confluence of Tien River and Co Chien to entry Tien river toward the sea via Tieu estuary (Cua Tieu)

e. Scale of construction (expected)

Renovate and upgrade the navigation channel for 5000 DWT ships to throughput. However, Co Chien bridge was completed and officially put into operation from 16 May 2015 with navigable clearance $H = 25\text{m}$, $B = 120\text{m}$. Hence, the reconstruction scale of the navigation channel should be defined in accordance with capabilities to allow waterway vehicles from the estuary, through the bridge to riverside docks (which mostly locate on the upstream).

f. Total investment (expected): 268 billion dong mainly intended for dredging of the navigation channels in combination with making use of saline sand.

g. Form of investment (expected): BOT

h. Preliminary assessment on payback plan, mechanisms and policies

- **The source of revenue:** Revenues can be from vehicles throughput Co Chien estuary and the use of dredged products.

- **Mechanisms and policies:** Require state budget of about 27 billion dong to invest in the items such as upgrading signal buoys system, management of channels and supporting to release fishing traps, obstacles on the river, etc.

i. Planned implementation period: 2016-2020