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OUTLINE OF THE KRA CANAL/PORT(S) COMPLEX

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PREAMBLE

The Kra Canal project which has been much talked about but little progressed over the last century is urgently calling for a reapprasal. The big boost in sea traffic today caused badly congested sea lanes and increased accident rate to the world merchant fleets to an unprecedented high record. The Straits of Malacca, one of the most congested sea lane in the world, with only 6 miles width at the narrowest part, now handles about 40,000 ships a year, Sunken ships serve as markers on the entire length of the 500 miles waterway. The sea traffic is so heavy that it makes today's waterways look more and more like airways and highways. With the site of Kra so close to the Straits of Malacca, it is high time to consider the Kra canal as a waterway-flyover to ease the traffic.

To cope with the trend of larger and faster ocean-going vessels, this region needs deepsea ports with modern facilities. The Southeast Asian countries geographically lack the sites for deepsea ports; technically they lack knownow and financially they are short of means to build and to maintain such ports. The port(s) under the Kra Canal Complex would have adequate facilities to offer to the neighbouring countries. It is a timely solution for all the regional countries in this regard.

The National Executive Council (NEC) under Their Excellencies the Chairman Field Marshal Thanom Kittikachorn, Vice Chairman Gen. Praphas Charusathira and Assistant Chairman Pote Sarasin have made a historical decision in giving the greenlight to conduct economic and technical feasibility studies as a pre-requisite for subsequent works. This outline contains: the history; the new Canal/Port(s) Complex versus the old Kra Canal Project; benefits of the new Complex; a working program and the administrative organization outline. It is hoped that this outline would give people a brief idea of the Kra Canal under the new concept.

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THE HISTORY

The Kra Canal, after the Suez and the Panama, would be the 3rd world major waterway, connecting the Indian Ocean and the South China Sea. Dating back to the days of the great European colonial empires in South and Southeast Asian, the idea had gained historical fame by a sequence of eventful developments in the last century. The original idea was to cut a canal through the narrow but hilly terrain of the Kra Isthmus.

For military reasons and as early as 1793, the younger brother of King Rama I, had already planned to dig a canal across the peninsula connecting the Lake of Songkla with the Indian ocean to facilitate military and naval operations against the frequent Burmese invasions by land and sea.

During the reign of Rama IV in 1858, the British took complete control of Burma. The advantageous position of having a canal cut through the Kra Isthmus was viewed with favour by the British Government as this would have considerably facilitated navigation between India and China. Permission was graciously granted by H.M. the King of Thailand. However, due to lack of funds and their inability to find interested partners, the British failed to bring this project to materialization. Instead, a scheme for the establishment of the Siam Railway Company, to construct and operate a railway across the Kra Isthmus, was presented to Lloyd's of London for Royal approval. The scheme came to a standstill after failure to reach agreement on terms and conditions.

In 1863, a team under two British Engineers, Captain Frazer and Captain Furlong made a thorough survey of the Kra Isthmus but reported that a canal was impractical because of the hilly terrain and proposed building a railway instead.

In 1868, rumours were circulated worldwide that a French Team would apply for permission to cut a canal through the Kra Isthmus, though there was no evidence of the French Government supporting this project. The Thai Government realizing that this would lead to serious territorial trouble in this particular area, as the project was in major conflict with the British trading interests in Penang, Singapore, ordered Phra Phites Phanich to open a tin mine at Kraburi to prevent the British from misunderstanding that the Thai Government was supporting the French.

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In 1872, Captain A.G. Loftus, R.N., representative of the British Government made a survey of Gulf of Chumphorn, Chumphorn River, the Elephant route, Kra River and area at its mouth. A detailed map was prepared and his summary report printed in Singapore in 1882 gave the opinion that "Cutting a canal through Kra is not an impossibility".

In 1882, Count Ferdinand de Lesseps, builder of Suez Canal and one of the men who first drew up plans for the Panama Canal, also surveyed the area and two years later the French Government conducted its own survey. As the party failed in obtaining the Royal Charter, the Kra issue came to another standstill.

In 1934, the Kra issue became a headline again when a Singapore newspaper splashed on its front page the sensational news that "the Japanese have been granted concession to dig the Kra Isthmus". The news was then clarified by Thai Government to be entirely groundless.

In July 1945, a news item on Canal digging in the French paper "Le Oringoire" created a lot of sensation. The Thai Minister of Defense was then contacted by Col. Roux, the French Military Attache for permission to investigate the matter. In his report to the French Government, it was announced that the news regarding the digging of KRA Canal by the Thai Government was again completely groundless.

In 1946, as The British Government became very much concerned over the KRA issue on account of these rumours, purposely imposed upon the Thai Government a clause in a Formal Agreement dated lst January 1946 with the stipulations that:

> "The Government of Thailand undertakes not to cut any canal across the territory of Thailand to connect the Indian Ocean and the Gulf of Thailand without first obtaining the consent of the Government of the United Kingdom."

Political reasons, technical difficulties and the enormous cost of construction kept the KRA Canal from becoming more than a dream. The story of KRA went into hibernation for many years.

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In 1960, the situation of the world changed considerably and the formal agreement with the British Government was dissolved through the goodwill of the Thai. The controlling influence of the British and French over countries in Southern Asia was diminishing to the point of extinction. Subsequently, the Golden Peninsula Development Co., Ltd. (GPDC), under the promotion of Mr. Chow and his associates, submitted a proposal to the Thai Government on 25/11/60 to conduct a feasibility study for a revised KRA Canal/Port Complex. GPDC's proposal was twice approved in principle by the Thai Council of Ministers, on 20/2/61 and 4/4/61 but later shelved by the National Security Council on 31/3/64, for security reasons.

In November 1971, in a joint announcement Malaysia and Indonesia claimed the "Straits of Malacca" as part of their respective territorial waters, against the objections of world maritime and naval interests. This has become the latest international issue of the region. The intellectuals, critics, and economists' views expressed in favour of cutting a canal across the Kra, as well as the Thai Government's interest in reviving the old issue, have suddenly brought the long dormant canal project to life again.

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A NEW CONCEPT

The Kra Canal, a 100-year old project, referring to a canal probably with locks, across the Kra Isthmus, always raised doubts as to its economic value, due to the insignificant SAVING OF DISTANCE, as compared to the distances saved by the Suez and the Panama Canals, and due to the hilly terrain of the KRA Isthmus causing high construction cost, with or without locks. The other drawbacks of the old project are its close proximity to the Burmese border and the fact that from Pointe de Galle, in Ceylon, through the Kra Isthmus, to Point Ca Mau in South Vietnam, there is no straight line, in other words, it is not the shortest distance.

The proposed Complex is based on a new concept which is fundamentally different from the old canal project. The main ideas in the new concept are:–

1. Relating to Canal

Ship traffic the world over is at an all-time high. With the Straits of Malacca being one of the most congested sea lanes in the world, the building of the Kra canal today becomes a necessity irrespective of whether the Straits of Malacca remain an international waterway or not.

a. Location

Between latitude North 7° - 8° instead of 10° - 10.5°, about 200 miles down from the Kra Isthmus on the flattest part of the Golden Peninsula, enabling ocean-going vessels to avoid the trips around the tip of the peninsula. A direct distance saving of about 900 miles would be only one of the many advantages provided by canal to the world shipping.

b. A sea-level canal without locks

Thale Luang, a large inland lake, which lies athwart the canal's route, would make it possible to cut a fast and efficient sea-level canal without locks through which oceangoing ships could steam at normal speed.

c. A two-way-sailing canal

With adequate width, the canal would facilitate speedy sailings in both directions.

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d. No limit to draft

With adequate depth, the canal would facilitate ocean-going vessels, including giant tankers currently in service and in future to pass through.

2. Relating to Port(s)

The great changes in the world after the Second world war, have also affected the international maritime patterns. A 60,000 DWT oil tanker which used to be referred to as a super tanker, is dwarfed by today's 200,000 DWT tanker, 200 of which are now in service. Two 500,000 DWT tankers have just been launched and orders for another 6 are being placed. Oil tankers of one-million DWT are awaiting orders for construction. They are not only in blue print stage.

The situation regarding dry cargo ships is more or less the same. Right after the war, a standard sized vessel was 10,000-ton. Today, bulk-carriers have reached over 100,000 DWT capacity whereas containerships of 50-60,000 DWT are considered as the economic size.

The speed of ocean-going vessels has also greatly advanced. Before the war, the fastest vessels sailed at 10 knots per hour. Today, they are speeding at 20 or more knots per hour, which was the speed of a torpedo boat before the war.

In spite of the above shipping progresses port conditions and facilities in the Southeast Asian region have made little progress and thus lag far behind the requirement of the much bigger and faster vessels of today.

The ports in the region, such as Madras, Calcutta, Dacca, Rangoon, Kuala Lumpur, Bangkok, Saigon, Hanoi, Canton, Shanghai etc. are all river ports. Take Klong Toey harbour in Bangkok as an example. Klong Toey is a typical Southeast Asian port, which is located about 100 kms. inside the Chao Phya river. This river is unlike those in the States or Europe, where the strong current shoots out like an arrow into the sea thus allowing ocean going

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vessels to sail inside river at normal speed. The current of the old rivers in Southeast Asia flow slowly like a snake, and gather deposits at the mouth of the river. Constant dredging is required to keep the riverway open for shipping. Mostly only vessel of 10,000 tons can sail into the river, and even such vessels have sometime to wait for the high tide. While sailing inside the river the speed has to be greatly reduced in order not to collide with small boats. Again, the loading and unloading at the port consumes more than necessary time due to inadequate harbour facilities.

Southeast Asian countries have been handicapped by financial difficulties, lack of technical knowhow, limited volume of trade and most of all lack of sites for deepsea ports. Psychologically, to build a deepsea port to accommodate modern vessels owned by rich countries is tantamount to asking the poor to help the rich. Therefore, the Kra canal / port(s) complex envisages the constructicn of one or two ports attached to the canal and this could be the most sensible solution.

With all facilities provided, the port (s) could function as:

a. A Principal Entrepot

For big ocean-going vessels, including modern container ships of 50-60,000 DWT, to unload and collect cargoes at the port(s) for delivery to and despatch from those river ports in the region to Europe, the United States and Japan.

b. A Regional Feeding Port

To be served by a fleet of small freighters of 500 - 3,000 DWT each for transshipment to and from between the ocean-going vessels and river ports.

c. A Regional Trade Centre

The construction of the modern deepsea port(s) and the establishment of shuttle services will eventually boost the volume of regional as well as international trade. The ports(s) could serve as a trade centre(s) for the South and Southeast Asian countries.

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d. A Processing and Industrial Development Centre

The port(s) can be called "Asian Port"(s) with the function and operation similar to or even exceeding that of the "Europort" of Rotterdam. The site could serve as a Processing and Heavy Industrial Development centre.

The economic value of port(s) attached to Kra Canal will be of equal or greater importance than that of the canal.

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BENEFITS

The Southeast Asian region to be actively serviced and benefitted by this centrally located canal and its port(s) and other facilities will cover 12 countries where one–third of the world population lives.

The economic value of the port(s) attached to the Kra canal is therefore not to be overlooked and the combination of schemes is distinctively a valuable feature of the envisaged complex as compared to other existing canals in the world.

Considering the advantages and benefits of the proposed canal and its port(s), the value of the KRA CANAL should also be assessed by volumes of tonnages passing through plus the substantial bulk of trans–shipment and for regional trade; by the area and number of population it would serve; by its effect on economic development of the area and the world at large; and the prestige to the builders and the canal owner in the eyes of the world.

In assessing the value of KRA Canal/Port Complex with its integral part of the project the benefits of DISTANCE and TIME saving factors are to be taken into consideration. Although the DISTANCE saved is little as compared with continental distances saved by Panama and Suez the SAVINGS IN TIME by ocean–going vessels calling at fewer ports multiplied by the SPEED of todays vessels would more than offset the distance saving advantages of the existing canals.

As the speed and size of ocean–going vessels will increase further, the value of this complex would increase even more in the future.

1. Benefits to Thailand

   a. Strategically a unifying factor for bringing together the Southern provinces with the Central and Northern ones into a newly developed centre and placing Thailand in a commanding position over the South and Southeast Asian region.

   b. Economically bringing economic boom to Thailand as a result of increased activities in trade, shipping and industrial fields and new job opportunities for the future generations.

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c. Financially creating a large national income, mostly in foreign exchange.

2. Benefits to Asia

a. Developing an Asian port to provide the countries within the region with modern deepsea port facilities, thus saving the money required for the building and maintenance of a deepsea port in each individual country.

b. Developing a Shipping Enterprise As a result of the establishment of adequate shipping facilities the countries in the region could afford to build up small fleets of "regional freighters"–small ships of between one and three thousand tons, which could navigate the river deltas with no difficulty or loss of efficiency.

d. Encouraging Regional Economic and Industrial Development The canal zone could be designed and developed to serve as Regional Industrial Centre for certain types of heavy industries and other economic undertakings which are fundamentally required but not possible to be set up by individual countries alone.

3. Benefits to the World

a. Creating a new waterway to facilitate sea transportation between The East and the West.

b. Saving TIME for big ocean–going vessels.

c. Creating a new trade centre of the world.

d. A new spot for international activities to promote international cooperation for projects of mutual interest, understanding and friendship among people and eventually towards the establishment of world peace.

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WORK SCHEDULE

The site of the proposed "Canal/Port" Complex is within the Thai territory and naturally, Thailand's SOVEREIGNTY, SECURITY and BENEFITS are the foremost factors to be considered. Thailand will take the initiative and leadership in this project. In order to achieve the best possible benefits from a project of such magnitude, it is proposed to carry out the work in 3 stages i. e.

- Feasibility Study Stage,
- Engineering / Construction Stage, and
- Operating / Management Stage.

1. Feasibility Study

For a project of such magnitude which involves a construction cost of billions of U.S. Dollars, long term multi-national financing is essential. To ensure a successful performance of such a complicated work, a very careful study must be undertaken by the world authorities in this field.

a. Feasibility Studies

There are two feasibility studies to be conducted:

i. Reconnaissance Survey

This study will require 6 to 8 months to complete and cost about 10 million Baht.

ii. Detailed Feasibility Study

If the results of the first study are promising, a detailed study will follow immediately. The second study will require 18-24 months to complete and cost about 40-100 million Baht.

b. Nuclear Excavation

The study of nuclear excavating began formally in 1957 in the United States when the American Atomic Energy Commission (AEC) launched Project Plowshare, a broad effort to develop peaceful use for nuclear explosives. Several years of extensive cratering tests have made it possible to establish and verify em-

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pirical relationships between energy yield, burial depth of explosives and crater dimensions. The engineers and scientists of AEC are now able to know a great deal about controlling radiation fallout, predicting and limiting damage from ground shock and air blast.

The U.S.A. was contemplating the use of nuclear energy to cut a sea level canal across Columbia, 93 miles long, 1000 feet wide and 250 feet deep, able to handle 200 ships a day. Although AEC had affirmed the feasibility of digging this canal by nuclear excavation with radioactivity held to safe level, permission of Russia and Great Britain must be asked and obtained before the U.S. could use nuclear explosives in building such a canal. International agreement or amendment of Test Ban Treaty would be needed.

The possibility of using a string of underground nuclear explosions to cut the KRA Canal will also be considered.

The study of the Panama sea-level canal made by the U.S. Government cost 29 million U.S. Dollars. The Southeast Asian Regional Transport Survey financed by United Nations Development Programme, U.S. Government and by Asian Development Bank cost 2.9 million U.S. Dollars. Much of the data and statistical figures in the said two surveys could be utilized for the feasibility study of the Kra Canal, the cost of which could thus be much reduced. It is estimated to be between 2-5 million U.S. Dollars, depending on how much details the feasibility study would require. The cost will be financed by private concerns, with no involvement whatsoever from the Thai Government.

2 Engineering/Construction

The proposed canal/port complex is one of the world great public works of the century.

a. Investment The cost of engineering and construction could not be known until a detailed study is made. Nevertheless, the figure would be in the multi-billion Dollars bracket.

b. Period The length of period required for construction depends on what method will be applied - conventional, Plowshare or the

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two combined. Regardless, engineering work will be started immediately after the completion of a favourable feasibility study. The construction work would take 10 or more years to complete.

c. Financing The total cost will be covered by private sector.

d. Ownership The ownership of the canal, port(s) and port facilities will belong to the Thai Government.

3. Operation/Management

In order to protect Thai country's sovereignty and national rights on the one hand and to ensure a successful performance of the operation/management of the proposed complex, on the other, the administration is to be divided as follows:

- official administration such as Port Authority, Immigration Security etc. to be run by Thai Government.

- technical/commercial operation to be run by private concerns under Thai Government supervision.

4. Operational Period

Due to the magnitude of the complex and the huge long term investment, an operational period of 50 years or more would be required to cover the amortisation schedule. Exact number of years required will be determined at a later date.

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ORGANIZATION

To safeguard the sovereignty and security of Thailand and to achieve the best benefit for Thai people, two companies are to be established to perform different functions, for good coordination and smooth performance of the Complex:

1. A Thai Company – to be specially incorporated and registered in Thailand as a 100% Thai public company.

   a. Registered Capital – to continuously increase as a result of increasing public subscription.

   b. Shareholding – limited to Thai nationals and Thai residents.

   c. Par Value – Baht 100 per share, to enable every Thai citizens to acquire Company shares.

   d. Functions –
      - to obtain from the Thai Government and to hold,
        - permission for conducting an economic and technical feasibility study,
        - permission for engineering and construction works,
        - permission for the management and operation of the installations in the canal zone/port areas.
      - to conduct with the Thai Government any negotiations for the necessary assistance in performing work and services in connection with the study, the engineering/construction, the management/operation of the complex.

   e. Management – This Company will be run by 2 committees:
      - Working Committee – with at least 85% Thai, to be responsible for carrying out detailed works,
      - Supervisory Committee – consisting of Government appointed members, to give guidelines and to supervise the works of Working Committee.

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f. Dividend Policy – Besides dividend payments to shareholders, 10–20 % of the net profit of this Company would be donated to a Foundation, which will limit the use of the funds to education and public welfare purposes for Thailand.

2. An International Company – to be incorporated in a neutral country, such as Switzerland.

a. Function –

- This Company will be responsible for the performance of studies, engineering/construction, operation/management of the complex and the training of Thai nationals.

- In cooperation with the abovementioned Thai Company, this International Company will undertake and be responsible for the financial and technical arrangements for the construction and operation of the entire complex, without financial obligation by the Thai Government.

b. Profit Allocation –

- A portion of the annual net profit of this International Company will be donated to a Foundation to be used for education and social welfare purposes in Thailand and other Southeast Asian countries related to the proposed complex.

- A further sum from the annual net profit is to be set aside for 10 prizes similar to Nobel Prize, to be granted to engineers, agriculturists, economists, ecologists, natural and social scientists, social workers, educators, lawyers and journalists of various nationalities.

The above organizational structure is suggested only to serve as a base for future discussion with all important parties concerned.

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